

Vol 5 No 10

October \$3.50

# The Australian **COMMODORE** and **AMIGA REVIEW**

*Stepping  
up to an  
Amiga*



**Reviews:** Kindwords ● Ultra - Laser ● CAD 128 ● The Works ● Carrier Command  
● Starfox ● C64 IRQ's ● Closeup: Geopaint ● C64 Emulator  
● Amiga Startup-Sequences ● Amiga Transputers ● Latest Virus news

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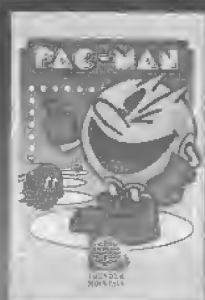
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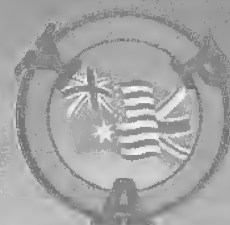


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# The Australian COMMODORE and Amiga Review

VOL. 5 NO. 10

October 1988

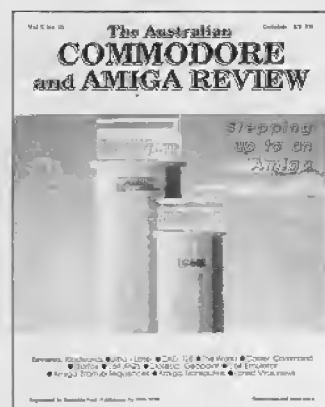
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**Australian Commodore Review**  
21 Darley Road, Randwick, NSW 2031  
Phone: (02) 398 5111  
**Published by:** Saturday Magazine Pty Ltd.  
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(02) 398 5111 or (02) 817 2509

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**Layout:** Amanda Selden  
**Subscriptions & back issues:**  
Tristan Mason (02) 398 5111  
**Distribution:** NETWORK  
**Printed by:** Ian Uddell Pty Ltd

# Editorial

About the only constant feature of life today is change. This month, we're the culprits. Out with the old and in with the new sock-melting format. Helping clean out the cobwebs, we welcome the likes of Phil Campbell back to our ranks as well as a host of other newcomers.

New columns - to help cope with the C64/Amiga mix - and better articles.

A special extended handshake goes to Dan Gutman, who joins us on a regular basis. Dan is based in the USA, and is world-renowned for his articles appearing in publications such as *Compute!* He writes in an entertaining, down to earth style on aspects of computing many of us have never given a second thought.

Our reviews will be more hard hitting than earlier days. We feel it's time to rest on our reputation a little more, and the fact that we are basically the only Australian Commodore magazine worth its salt. So they can take it or leave it.

With our new format, C64 owners may feel like we're starting to sweep them under the carpet. Not true. You'll find just as many articles as ever before. Commodore promise there's still several years life left in this wonder machine - a fact that has taken them a while to realise.

Next month we'll have a full report on the World of Commodore show - this month's deadline fell just a tad too soon. Don't forget to register your user group with us too, in time for the Annuals. Until then, enjoy.

## STOP PRESS

A near final release (version 10) of Workbench 1.3 was demonstrated at the World of Commodore show. Running the new Fast File System, the Amiga 2000 in question performed much faster in all disk based operations - especially since the hard drive in use had a 23ms disk access speed.

Window handling is also a tad quicker. Gold Disk showed off *Professional Page*, *Comic Setter* and several other goodies. Several hot new products were on display at various stands - full reviews and pictures next month.

**Andrew Farrell**

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12 issues \$34.00 (including postage)



# RAM Rumbles

## Questor signs Actionware

Imagineering's entertainment division, Questor, has scored a major coup in the computer games arena by signing up US-based software company Actionware, currently one of the hottest properties on the market.

Actionware's popularity extends simply from the extremely high quality production of their games.

Their first product, *Capone*, which features gangster shoot-outs in 1920's Chicago, has been hailed overseas as the Amiga game with better-than-arcade-quality graphics.

Actionware has also incorporated the Light Technology usually seen on Sega machines to bring the Phaser Gun into play. The Phaser is connected through the mouse port, and allows the user to physically take aim and shoot the



'baddies' down.

However, the player can't afford to be indiscriminate, as penalties are awarded for shooting innocent parties, such as women, children and animals.

The combination of such superb graphics, realistic sound effects and the Phaser makes *Capone* one of the best home computer games Imagineering has ever distributed.

However, the most amazing thing about *Capone* is that it is Actionware's FIRST product.

They have a policy that each new title will improve in some way on their previous products, so Questor staff are waiting with eager anticipation for the company's next releases, *P.O.W.* and *Creature*.

*P.O.W.* explores the popular theme established by the movie *First Blood II*, combining again the real-life action of the *Phaser Gun* with Actionware's amazing graphics and sound effects.

*Creature* has been designed to tempt those with a yen for science-fiction, and stages an exciting battle between the user and aliens who have boarded their spaceship.

Actionware has set a new standard for computer games, and its high quality software is likely to make a significant impression on future productions from other software houses.

## Financial news

Yet another healthy, profitable quarter for Commodore USA. Their third financial quarter ending March 31 resulted in sales of US\$200.3 million, with a profit of US\$9.6 million for the quarter. Sales for the first nine months of their fiscal year total US\$655.9 million, with profits of US\$43.6 million. That's an

increase in sales of 18% over the same quarter last year-to-date profits for the first nine months. If you've got some Commodore stock, you've already earned a dividend of US\$1.37 a share.

Along with the financial report, Commodore CEO Irving Gould indicated that sales of the Amiga product line now account for 45% of Commodore's sales.

## New gizmos - remarkable, or stupid?

by Dan Gutman

You would think that once a year I could write a column about the new goofy computerized gizmos that are hitting the market. Not so. I could write one every few weeks.

These days, it seems that just about every new consumer product has a microchip stuffed within it someplace.

Take, for example, "The Electronic Cat Door" (US\$140) found in the latest Hammacher Schlemmer catalog. It looks pretty much like other cat doors, except that it won't open for any cat except YOURS.

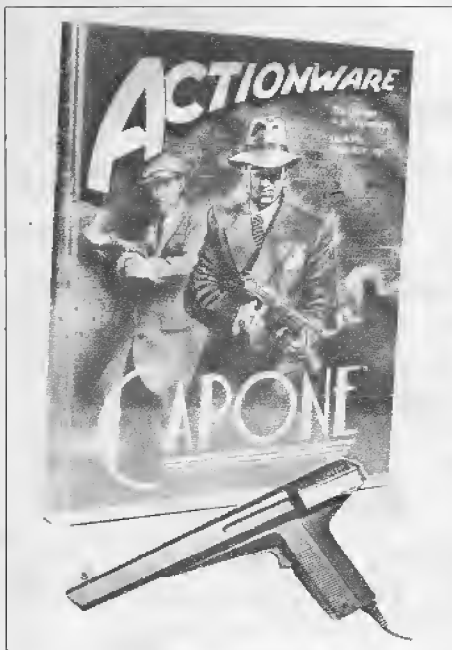
When Fluffy approaches the door from either side, her special collar sends out an invisible signal to open up. A sensor on the door recognizes this and unlocks the door. When unfriendly neighborhood pets and stray animals approach the door, it stays locked.

Remarkable, or stupid? You decide.

Then there's the new computerized fishing reel. You heard that right. Ryo-bi, a Japanese firm operating out of Bensenville, Illinois, has introduced a reel with a chip in it that monitors the rotation of the spool as you cast. If the spool moves faster than the line, the computer puts on the brakes to prevent backlash.

The company claims this computer reel (US\$85-\$100) will help you cast farther than the old thumb-on-the-line reels.

You can tell the field of robotics has really come into its own, because new ridiculous robots are finally hitting the market. A Pennsylvania company called Gettig Technologies has created a US\$2,350 robot golf caddy. As you



walk the links, a transmitter in your waistband tells the rolling computer to follow three feet behind. The little fellow can carry two sets of golf clubs, as well as your liquid refreshments.

And the folks at The Sharper Image recently announced a robot camera called "Radicam" (US\$99). You maneuver the thing around your house by radio control, snapping outrageous ground-level photos of amazed family, friends, and pets. "Radicam" even comes with a built-in flash.

Fitness buffs are known to be enamored with technology. "Computrainer" (US\$595) enables you to hook up your exercise bicycle with any IBM or Commodore computer. The device includes a software program that simulates hills, varying terrain, tail winds, head winds, and a variety of scenery on the screen as you pedal.

It is even possible to hook two "Computrainers" together and have a simulated race with a friend. Of course, you could also race your friend outside in fresh air on REAL bicycles.

After your big race, you'll want to cat right with "The Nutrition Computer" (US\$200) from Hammacher Schlemmer. This gizmo has a built-in scale that weighs your food. You type in the kind of food it is and the computer calculates the amount of carbohydrates, calcium, fat, cholesterol, protein, fiber, iron, salt, and calories.

Perhaps the silliest new product in quite a while is "Cellular Phoney," from Faux Systems in Los Altos, California. This bogus device looks and feels just like a real \$1,500 car phone, except that it costs \$16 and doesn't do anything. It just sits there. (Dick Smith has fake car phone arials to go with it! - Ed.)

The company's motto: "It's not what you own; it's what people THINK you own."

Remarkable, or stupid? When you consider that more than 45,000 of these things have been sold, you've got to wonder.

## Hotline

● Jostens Inc. of Minneapolis has acquired more than 20 percent of Broderbund Software, the company that gave us *Print Shop*, distributed downunder by Questor. Software really is big business.

● The adult board game *A Question of Scruples* has been turned into a new computer game by Virgin Games and Electronic Arts. It's out first in Atari ST format, others to follow soon.

● Instant cash machines at banks must be a huge success, because the idea of round-the-clock convenience is spreading to other businesses. In California and New York City, "Mr. Dry Clean" has begun to appear.

You drop off your clothes with the machine and pick them up a few days later, running your credit card through a slot for payment. Can "Mr. Post Office," "Mr. Library" and "Mr. Butcher" be far behind?

● So when is some savvy game designer going to create the most obvious new computer game in the world: "The Greenhouse Effect"?

As I see it, players will have to use political, strategic and other non-violent means to prevent industrial America from destroying the ozone layer. Can you prevent the Earth from warming up and make the air safe to breathe without destroying the economy?

● Jack Nicklaus has signed an agreement with Accolade to produce golf simulations. The first release will be *Jack Nicklaus' Greatest 18 Holes of Major Championship Golf*.

● Insite Peripherals of Santa Clara has announced a "floptical" disk drive that stores 20 megabytes of data on a single 3.5 inch disk.

● In the arcades, *Final Lap* (Atari) is being hailed as the first "linked game" by the folks at Computer Entertainer. It's a driving game in which players can stand at separate arcade consoles and race against one another. Each player can see the other cars on the screen.

## Update



Hi, if some of you are wondering why you have had problems getting some of Pactronics products let me tell you a little story.

Once upon a time there was a Customs 'go slow' which became a Customs 'walk out' which became a sort of strike and which then finished (as far as we know with nothing being gained). This, of course, held up a lot of our goods and one container load actually went to Melbourne, because the shipping company refused to allow the ship to wait outside the Heads.

With the Customs strike being on in Melbourne as well, they turned back from there and decided to give Australia one more chance by calling in at Brisbane the day after the Customs strike was over and managed to get the containers off the ship before the wharfies went on strike. They stayed off for a few days and then we were told that at least the container would be shipped by rail (no strikes imminent) to the container depot in Sydney from whence we could collect it, but HORROR OF HORRORS and totally unbelievable, we now have a Transport Workers Union blockade of all container depots, and guess what. We still have not got our container which was sent to us nearly three months ago. There must be a moral to this story but I am not sure I know what it is.

The good news is that by the time you read this the Final Cartridge III and Action Replay IV will (strikes willing) be in your local shops, as will the new educational products from Arrakis, and the new games from France.

By the way, keep your eyes open for an advertisement about a promotion we are doing with Grace Bros in which there will be fabulous offers on our Disk Boxes and Joysticks.

For the Amigas, the new books should shortly be out and we now have stocks of the disks for *Tricks & Tips*, and *Machine Language*. We are told that *Dataretrieve Professional* is on its way which will make all other Amiga databases obsolete.

GTGN

Advertisement

Commodore and Amiga Review 5

# Entertainment software roundup

**W**ITH HUNDREDS OF software houses releasing dozens of new titles every month, it can be a real uphill battle to keep up with what's new. This new regular section in *Australian Commodore and Amiga Review* will list any new software releases in the entertainment area for both the Amiga and C64/128. You'll notice that we have broken the list into current releases and those coming soon. Where possible the expected date of availability is included. After each title, the publisher and distributor are included.

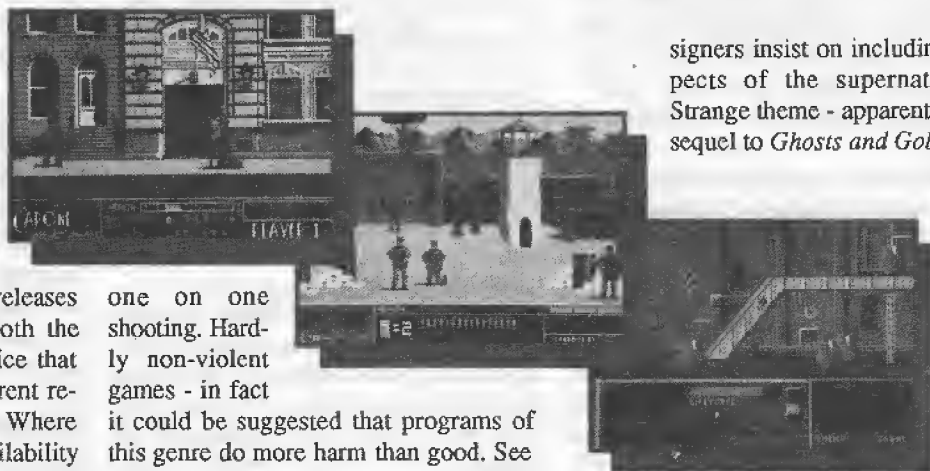
If some of the descriptions seem a bit sparse, it's probably because nobody has actually seen the game yet - so take what you read with a pinch of salt, and a pound of imagination. On another note - we won't hesitate to slam games that are poorly written, over-rated or contain themes that indulge in gratuitous violence or other unnecessary action. You may not share our views, but we feel a strong responsibility, especially toward parents, in high-lighting the distasteful nature of these types of programs.

The software industry has no classification system - unlike films - so we're it!

## Amiga - new products

**Capone and P.O.W.**  
(Actionware, Questor) -- now shipping from Questor.

Both these games use the light gun or mouse to control firing action. Blatant



one on one shooting. Hardly non-violent games - in fact it could be suggested that programs of this genre do more harm than good. See Phil Campbell's review soon.

### Carrier Command (Rainbird, Questor)

Air/Air, Air/Ground combat in futuristic setting. Secure the land surrounding a new volcanic island containing a wealth of new resources before the world powers take over.

### Pandora (Firebird, Questor)

Set in space, scrolling graphics aboard a space station. Protect yourself from invaders - action adventure.

### Corruption (Rainbird, Questor)

Top adventure, reads text out to you, includes graphics. Set around a stock-broking partner with new found wealth - discovering the world of corruption. Another how-far-will-you-go game.

### Beyond the Ice Palace (Elite, ECP)

Levels and ladders type game set in mystic surroundings. Why do game de-

signers insist on including aspects of the supernatural? Strange theme - apparently the sequel to *Ghosts and Goblins*.

## Amiga - coming soon

### Legend of the Sword (Rainbird, Questor) Action adventure, mystic.

### Whirligig (Firebird, Questor) Space flight.

### Virus (Firebird, Questor) 3D space flight simulator, floating 3D landscape. A deadly Virus infects the land. (Deja vu?) Destroy it at all costs.

### Balance of Power: The 1990 Edition (Broderbund, Questor)

Players assume the role of President of the United States or the General Secretary of the Soviet Union. The players' two fold goal is to complete eight years in office (1989-1997) without initiating a nuclear conflict and to accumulate more



prestige points than the opposing super-power.

Originally released in 1985 by Chris Crawford, this new version includes more countries and a new multipolar level, bringing added realism to the program. Amiga version to be released in November.

### Empire

(Interstel, Electronic Arts/ECP)

A graphic war simulation game in which you are to annihilate the enemy in an unexplored world in space and attain total world domination.

*Empire* is a one-to-three player game between human and computer players.

Multiple difficulty levels and millions of different worlds to conquer provide hours of entertaining decision making. Battle records are kept on each player as

they participate in combat over land, air, and sea.

### Impossible Mission II

(Epyx, Questor)

A highly secret manoeuvre designed to control international hysteria. This sequel to *Impossible Mission* marks the return of that psychotic scientist Elvin Atombender. In hiding for five years, he has grown in power and has resurfaced with a diabolical plot to dominate the world.

As Agent 29, players must prevent the world from being destroyed by penetrating Elvin's immense, eight-tower Los Angeles complex, and neutralizing his complex, sophisticated computer

system. Amiga version expected around November.

### Overlander

(Elite, Questor)

Turbo charged version of *Fire and Forget*. Bit better.

### Starglider II

(Rainbird, Questor)

The sequel to *Starglider* released in 1986. Players control Icarus, the futuristic spaceship complete with three-dimensional instrument panel and sophisticated weaponry. Scored a massive 98% in *Zapp* magazine. Brilliant graphics - a huge improvement over the original classic.



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## Commodore 64 - new products

### Chaos

(Darryl Barlett, distributed by ECP)

A comical view of IBM's grip on the computing world. Another you can save the world before it's too late effort. Your task is to eradicate the bugs. Joystick operated action adventure.

### The president is missing

(Microprose, Questor)

Graphic adventure, the president and various other heads of state have been kidnapped - you have 48 hours to save the world.

## Commodore 64 - coming soon

### Street sports soccer

(Epyx, Questor)

This is soccer with the old neighborhood - no rules, no uniforms, and no Mr. Nice Guy! When it gets down to the wire, forget fairness! Players can block an opponent's shot, steal the ball, then shoot a hard slice into the net.

### The sporting news baseball

(Epyx, Questor)

Features stimulating graphics and the best of both statistical and action gameplay. Split screens give players camera angle points of view and the effect of network TV coverage.

### Daley Thompson - Olympic challenge (Ozisoft)

Daley's back on the track and going for gold! Work out in the gym, honing your body to the peak of fitness for the ten grueling events.

Live the events, feel the adrenalin pumping as you take Daley Thompson towards new records, new heights and victory. But beware, your performance in the gym will directly affect your perfor-

mance in the events themselves - it's all action - from lacing up your trainers to taking your medal - go for gold!

### The Vindicator (Ozisoft)

Alien forces wreak havoc on our planet. The earth torn and blasted in what seemed the final war. But enough survived to uphold the laws of justice and revenge. Now one man must face the final enemy. He is The Vindicator.

Across a tortured landscape against incredible odds he must battle through to the enemy stronghold, down into maze-like corridors filled with mutated guardians until he reaches the inner sanctum of the dark overlord to strike the final blow of retribution.

Become The Vindicator in the multi-sectioned game of survival as state-of-the-art graphics take you on the adventure of a lifetime.

### Robocop (Ozisoft)

The most exciting film of the year now for your home micro. Take on the role of avenging angel as you met out rough justice to the perpetrators of evil and lawlessness.

Some of the most exciting scenes to fill a computer screen confront you and the future is here and now when you take up this challenge - part man - part machine - all cop - ROBOCOP!

### Guerilla Wars (Ozisoft)

From the SNK stable, the coin-op smash hit now for your home micro. This multi-level, vertically scrolling arcade thriller throws you deep into the jungles and mined cities of a nation held in the grip of a cruel oppressor. Freedom is your aim - Guerilla War is the means!

### Operation Wolf (Ozisoft)

The No 1 arcade game of 1988 is recreated perfectly - six levels of thrilling coin-op action are brought to life on your home micro. Without fast and accurate shooting skills you will never complete your mission which takes you through steaming jungles and enemy strongholds as you attempt to liberate

the prisoners and secure a safe getaway. With all the original arcade play features - magazine reloads, energy bottles, hidden supplies, rocket grenades and much more.

### Rambo III (Ozisoft)

He's back and this time he's taking no prisoners! Colonel Trautman has been captured by the Russians in Afghanistan and there is only one person capable of freeing him. Negotiate the minefields, explore the Russian camp, lay booby-traps, avoid detection, free the colonel and then - move on to the explosive climax! (Another WAR game!)

### Typhoon (Ozisoft)

Soar through wave after wave of flying death in your armour-laden helicopter, scream through the skies in your F-14 as you take on the seemingly limitless hordes of mechanoid invaders, whose sole intent is total domination of the Earth.

This Konami coin-op features fast scrolling and 3-D frenzied dog-fighting, accumulate a vast array of deadly weapons. Six levels of pulse pounding excitement. Each culminating in a devastating adversary.

Well, that about wraps up this month. Some of these titles I think we could do without - hardly fun-loving stuff I'm sure you'll agree. Check out the review of *Zoom!* in this issue - Ed.

## Cockroach Software

PO Box 1154,  
Southport 4215  
Phone: (075) 91 6188

Cockroach Turbo Rom	\$42.00 including postage
Cockroach Graphics Utility	\$69.95 including postage

# Notepad

## Notepad

### Lattice C Compiler Update

The upgrade is available in Australia from Commodore directly. You should contact Commodore Technical Support, 67 Mars Road, Lane Cove N.S.W. 2066. They will be able to look after you.

Alternatively, you can deal direct with Lattice Inc. in the States.

### Prosound

New from Questor and Entertainment International, *Prosound* features Midi facilities, and live sound sampling. It has been billed as the hi-tech music package alternative. Full review soon.

### Tiny Tiger - Overview SCSI Hard Drive System

At the World of Commodore Show recently, Diskworks demonstrated their new Tiny Tiger. It's an inexpensive, self-contained SCSI system for those needing a hard disk on their Amiga. It can be used with all current models of the Amiga as it plugs into the parallel port providing an expandable means of adding mass storage to your machine.

It can be purchased without the drive, and may be used to interface to other SCSI products, including bar code scanners, universal relay card and an IEEE 488 interface adapter.

Tiny Tiger is designed for

users who do not require the high performance of a bus based DMA SCSI system. It also leaves the expansion bus on the A500 and A1000 free for other devices such as Minimegs RAM expansion.

A500 owners will appreciate not having a bulky box attached to the expansion connector of their machine, obstructing use of the left hand side of the keyboard.

The Tiny Tiger may not be a DMA based system but it is still fast and being SCSI can be daisy chained with up to seven additional SCSI devices. A standard 25 way SCSI socket is provided on the back to allow connection of extra units.

Tiny Tiger uses drives that are the same high performance, low power, 3.5" units featured in Diskworks range of speciality Macintosh drives ('The Sporrán'). The drives are available with a variety of different access times from 65msec to 19msec. Not only do you get increased reliability and speed from these hi-tech drives, but should you want to upgrade to 'Papa Tiger' - Diskworks SCSI drive system designed for connection to DMA based SCSI interfaces - you already own the high performance drives, power supply and box.

Diskworks guarantee to provide the conversion for \$25.00. And if you don't want

to buy one of their controllers, you're free to select someone else's, although Lightening Five - hyper performance SCSI controller for the A2000 - will give the competition a run for its money.

The whole works comes in a small footprint package approximately 6.5" (W) x 8" (L) x 2.5" (H).

Tiny Tiger base unit without drive but including all hardware, software, power supply and cables - \$399. Then just add your choice of drive:- from a Miniscribe 20Mb at \$599, to the Quantum 80Mb at \$1999.

NB: Above information extracted from specification sheets - a full review of the unit will coming soon.

### Wordperfect libraries

As available on the IBM PC, this includes a notebook, programmable calculator, program editor and a game. For US\$125 from 1555 N. Technology Way, Orem, UT 84057. However, you can get all these features on the public domain, so why worry?

### Designtext

Word processor - according to reports, this is a strong competitor in the upmarket WP stakes. It has all the functions you'd expect of a hot-shot WP, and goes further - it'll be available in English, French or German; will allow creation of tables in multiple columns with mathematical functions like averaging and percentages; will have very

speedy screen refresh rate and scrolling (some are a little slow); screen calculator and automatic backup function at specified time interval; a built-in outliner or idea processor (very useful); 100,000 word dictionary and an interactive database for direct integration into documents; keyboard macros; and supposedly many more features. *Excellence!* and *Wordperfect*, watch out. From Designtext Business Systems, Inc, 850 Burrard St, #304, Vancouver, BC V6Z 2J1 Canada. Price will be US\$129.

### Spelling Checkers

*ZING!SPELL* functions while you type, has 95,000 words, with custom dictionary, and works with all the main word processors. Price is US\$79.95, or you can send in your original spellchecker with its manual and pay US\$39.95. Future updates will contain a thesaurus and a CLI syntax checker, and it'll be free.

*GOLDSPELL II* contains a 90,000 word dictionary which is automatically loaded into memory upon entering the program. Works with most word processors, and includes Batch spellchecking, which creates a list of errors for a whole file in one pass. Also contains a readability grade level via a "Fog index", and can check word frequency usage. Updates from version 1.0 cost US\$20 from: Gold Disk, P O Box 789, Streetsville, Mississauga, Ont. L5M 2C2 Canada. Price US\$44.95.

*FLEET CHECK*, apart



## Notepad

from the usual 90,000 word dictionary can access 10,000 synonyms and antonyms and add 10,000 of your own words to the dictionary. Retail for US\$39.95 from Professional Software, Inc, 51 Fremont St, Needham, MA 02194 USA. TEL: (617) 4445224.

### Publishing Partner Professional

Now in competition with *Professional Page* for the foremost Amiga Desktop Publishing program, this allows colour separations, one-degree incremental text or image rotation, object slant and twist. Costs US\$199.95 from Soft-Logik, 11131 South Towne Sq, Ste F., St Louis, MO 63123. This is the program which will handle the integrated DTP setup from C LTD, as described in MD6, and below.

### C Ltd Consortium

C LTD will provide networking capabilities/multiple-user access to everything linked in a network, via their software package capable of networking for their SCSI Host/Controller to all other SCSI device hardware. (SCSI stands for Small Computer Systems Interface, an industry standard for interfacing computers and peripheral devices, like hard disks, CD Roms, etc.) In particular, the software will link up three new hardware products, viz:

> SCSI-based 300 dpi laser printer for less than US\$2500, in which the Amiga will preprocess the data into a bit-map and transfer it to the printer

via a "1 byte wide, high speed SCSI bus" in one continuous 8 second burst.

> SCSI 300 dpi page scanner (at last!) for US\$1500. A page of data can be scanned and directly printed in less than 40 seconds.

> A 9600-baud modem card based on a Zorro bus, with FAX transmission capabilities, for less than US\$600. For enquiries: C Ltd, 723 East Skinner, Wichita KA 67211, USA.

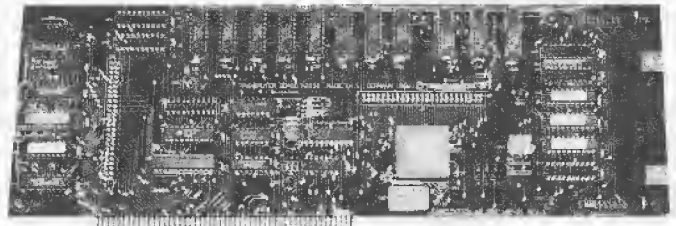
### Software upgrades

AiRT, the icon-based programming language for the Amiga, has been upgraded with bug removals and new features. Available to registered owners for US\$6, from PDJ Software, 111 Thornwood Dr, Marlton, NJ 08053. Not a bad idea, anyone got a review of it?

New Horizons Software, producers of the Word Processor Prowrite, which is a good WYSIWYG WP (OK?) if you've got more than 512K and want to incorporate graphics, are trying to convert you. If you mail in your present Word Processor master disk and US\$75 you'll get *Pro-Write V2.0* which normally costs US\$124.95. Address is: P O Box 43167, Austin TX 74745 USA.

### Prototype transputer demonstrated

At the recent Amiga Developers Conference in the U.S.A, the West German designed Amiga Transputer Project was demonstrated. Amiga



2000 owners adding this board will enjoy high speed parallel processing.

The board shown had a clean layout, reflecting its advanced stage of development - only one hand soldered jumper wire was visible. Specifications were, as usual, subject to change. The 32 BIT IMS T-414 or T-800 transputer chip was used running at up to 15MHz (10 MIPS), with 2K of on-chip RAM. An additional one to four megabytes of external on-board DRAM may be added.

Communication to other transputers is via four on-chip serial links.

What are the advantages? In simplest terms, the transputer is a slight case of overkill as a maths co-processor with faster throughput than a 68881. Compatibility with the 68000, 680020 or 68030 CPU is maintained.

The real power is evident only when the transputer is used to control a parallel processing system. But don't hold your breath, because AmigaDOS won't do the job. Commodore's choice is HELIOS, which will be able to automatically allocate resources and assign tasks to make optimum use of a transputer network.

Who's writing this new operating system? Much to

the disgust of some users, it will be Tim King, the same guy who wrote AmigaDOS. We are promised he has learnt from past mistakes.

Back to the board, you'll also find a DMA controller. Up to four daughterboards can be connected in an A2000 with that many empty slots. Each daughter board contains four transputer chips, each with its own 1-4 Megabytes of DRAM, for a maximum of 17 transputers in a single A2000 - but there's more!

You can link together several A2000s using the on-chip links, creating a LAN without the need for an additional controller cards. The result is equivalent to chip to chip links within the computer - forming a giant transputer machine with massive number crunching potential. Such power would be ideal for graphic applications. However, even multi-tasking jobs such as wordprocessing could benefit. You could run a ray-tracing program in the background - which would also enjoy a speed improvement depending on the availability of additional transputer power.

Price and availability are still up in the air - although things are certainly progressing well.

# C64er's

## Riteman C+ problems solved

We've had several readers call with problems using their Riteman C+ printers with graphics programs such as *Printshop*. The problem stems back to a faulty ROM in the printer. Contact your dealer and organise to have a Version 1.3 ROM fitted. Also, make sure dip switch three is on.

## Outrageous Pages dropped

Electronic Arts finally woke up to the fact they had a lemon on their hands and withdrew this desktop publishing nightmare from sale. The program was named various titles, the most recent of which was *Outrageous Pages* (known in Australia as *Stop Press*). And outrage it did. America's *INFO* magazine described it as "a castle built on sand". We didn't even bother reviewing it - our copy wouldn't work long enough to give our editor a chance to decide who should write about it. Never fear - *Paperclip* to the rescue, with *Paperclip Publisher*. Coming Soon - watch for a review.

## Commodore restructure

Australia's Commodore HQ is about to be restructured, with a split between the serious and entertaining side of their operation. Commodore 64 owners have been promised attention for years to come. Managing Director Tony Serra believes the machine still has several strong years left as a leading home computer. Our worry is will it survive the onslaught of cheap game machines over the next few months. There are more competitors this year than ever for the game player's dollar. Let's hope the C64 doesn't slip, after all, it's still the best value for money around.

## Instant Music

If you're into music, another package is about to join the fray of programs for making tunes. *Instant Music* will be available in Australia real soon now - promises the Australian distributor ECP. Full review as soon as we get a copy over to our music expert, Eric Holroyd.

## GeoPublish

GEOS fans have been waiting for this one for a while. *GeoPublish* will be hitting the streets at a recommended price of \$89. With a little expansion memory, programs like this can turn the C64 into a very powerful, yet inexpensive publishing machine.

Did you know that the expansion RAM for the C128 works with most C64's? The only thing to check out is your power supply. C64C's should have no worries. Commodore will not release the extra memory because not all C64's can cope with it - and the cost of a separate power supply is prohibitive. So, just grab a C128 expander and put GEOS through its paces.

## Disk Magazine 12

We've done it again - another issue of *Suite 64* on time. Our disk magazine is a bimonthly, double-side disk, full of fun programs, utilities and other goodies. Check out the advertisement in this issue for further details. Issues one to six are available at a reduced rate - call for details.

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# LETTERS

## TO THE EDITOR

### GEOS problem

I own a C-64, and I am very pleased with the programs I have obtained on it. I have *Geos*, and I have used the program in your magazine to make a bootable backup. However, now that I have *Geos* V1.3, via the update, I have discovered that the program invalidates *Geos*'s protection system, with the result that all copies, made by whatever computer, are now bootable.

This means that the desktop V1.3 will not allow you to do anything at all on work disks, due to their being bootable copies. I use *Geos* with a 1571 disk drive, but this has nothing to do with the problem, as I have tested it on my cousin's system with a 1541.

Is there anyone who can help me with this problem, as I cannot use the Work Disks I have made with Desktop V1.3 on them. I am using *Geos* 64, and I have heard that *Geos* 128 has a disk driver which supports the 1571, in double sided mode, but I would like to know if *Geos* 64 has a 1571 driver.

David Goh

*Ed - Answers will be published here.*

### New User Groups

#### Eastern Suburbs - Sydney

This is to inform you of our Users Group. We meet every Monday night at the State Emergency Service, 1355 Botany Road, Botany. At the moment we have over 40 members and cater for C64 and 128 and also Amiga computer users. The President is Mr. Jim Merchant and the Secretary is Mr. John

Campbell who can be contacted on (02) 77 9666 - Eastern Suburbs Commodore Users Group.

#### Redcliffe Peninsula - Brisbane

Could you be so kind as to list our Club and Bulletin Board in your publication. Redcliffe Peninsula Computer Club meets 7pm every 1st and 3rd Friday of the month at the Masonic Lodge, Sutton Street, Redcliffe, Queensland. Enquiries (07) 203 7367 J. Petterson (Secretary). BBS: AARTEC INDUSTRIES 2097, Phone (07) 283 3061, Hours 19.00 to 07.00 EST Daily, Bauds V21 (300/300) - Redcliffe Peninsula Computer Club

### C64 Emulator

I own a C64 and I am thinking of purchasing a printer. I plan to upgrade to an Amiga, but at the moment I'm quite happy with my C64. I was wondering whether you could provide a review or preview of a piece of software (or hardware) that will emulate the C64 on the Amiga (I already know the 128 can do this but Amiga is the way to go). This was advertised in one of the American magazines I saw. I'm sure many C64 owners wishing to upgrade to Amiga would be interested in this, as it allows the Amiga not only to run C64 software but also use its hardware devices such as the 1541 disk drive and printer. By the way, I don't mind paying the extra .50c for the ACR, as the value I get for my C64 by reading your magazine certainly outweighs this.

Darren Lee

*Ed - Thanks, Darren. The C64*

*Emulator is reviewed in this issue - there are others out there too, which we will be tracking down. New versions of these devices appear all the time, with slight improvements each time. At the moment they are not really viable for what you want to do - but stay tuned, that situation may change.*

### EasyScript problem

I wish to be able to tie together a word processing program, EasyScript, with a 80 column program called Screen80. Is this possible? Whenever Easyscript is entered, it appears to execute a software induced reset which disables the previously loaded Screen 80 program. If this is not possible to achieve do you know of any means of running Easyscript on a C64 computer in a true 80 column mode. Any suggested modifications would have to leave Easyscript otherwise untouched as I also use the EasySpell spelling check program. Although normally very slow, this spelling check program has become acceptable when used in conjunction with Dolphin DOS.

As I run a monochrome monitor the reduced definition in the 80 column mode is not a problem as it would be on a colour monitor. I hope you can be of some assistance as apart from this minor annoyance I consider Easyscript a rather useful Word Processor.

Brian Scholz

*Ed - Many people still use EasyScript with much success - but not in 80 columns - especially from software, Sorry, you can't do that! EasyScript takes over, as you have already noted. Suggest you consider*



a C128 if you're really after 80 columns badly.

## Family Tree

I have been searching for a "Family Tree" program to run on my C64 but have had no joy. Everyone thinks they remember a few being available but I can't actually track one down. Are you or any C64 users aware of a copy I could get hold of?

Laure McConaghey

Ed - Try a USA magazine - nothing distributed locally I'm afraid. We get dozens of queries for such a program. There is one that a few dealers have imported direct. Try United Computers in Brisbane.

## Riteman C+ solutions

In response to a letter from Mark Ryan, Dennis Purcell writes:- I am writing about the "Letter to the Editor" published in August Commodore and Amiga Review. Over a year ago I found the same problem of Printmaster failing to work with my Riteman C+ Printer. After a little study I found that the problem was a glitch in the printer routine on the program disk. If the program is set for 1525/801 (standard Commodore printer) the program loads in a printer driver file called "COMM.PDR". It takes only two small changes to this file to allow the use of the Riteman C+ printer.

To cut a long story (explanations of how to program a printer in machine code) short, I have devised a routine for you to modify your copy of Printmaster's Commodore printer driver. I hope the following will work, if not, send up a blank disk and I will send you a copy of my modified driver.

First make a backup of the program disk and do all the following with the backup disk.

With the backup in the disk drive, type all of the following lines in direct mode, pressing return

at the end of each line.

```
POKE 44,111
POKE 43,0
POKE 28415,0
LOAD "COMM.PDR",8
POKE 28536,255
POKE 28541,0
SAVE "@0:COMM.PDR",8
```

To test, reset the computer, (switch off then on) load Printmaster as normal, go to printer setup and make the following selections :-

```
Commodore 1525/801
Device number 4
EOL CR only
```

Try the test printer option and hopefully you should get a little message printed. Hooray!!

As I mentioned earlier, if all the above fails, send up a blank disk with your full address.

Dennis Purcell  
Kangaloon

## Calendar update

The A.C.R. Vol. 3 #8 August, 1986 printed a very handy Calendar Program titled "So You've got a New Printer", by Paul Blair and covering the years 1981-1989. Here are a few changes users can make to the program so it will cover the period 1981-1996.

It may help your newcomers and other users who are not interested in programming, however in the original article Paul did give a clue about altering the program but no details.

Alterations :-

- 1) Line 1230 and Line 1240 in the original are combined to make NEW Line 1230.
- 2) Line 1240 is now used to add Years 1990 and 1996.
- 3) Line 1310 is changed to compass years 1981 to 1996.
- 4) Line 1460 is changed to include all leap years.
- 5) Line 2050 is changed to com-

pass years 1981 to 1986.

Lines to be altered or added :-

```
1230 YS(1)=4:YS(2)=5:YS(3)=6
:YS(4)=0:YS(5)=2:YS(6)=3:YS
(7)=4:YS(8)=5:YS(9)=0
1240 YS(10)=1:YS(11)=2:YS
(12)=3:YS(13)=5:YS(14)=6:YS
(15)=0:YS(16)=1 1310 IF VAL
(YR$)<81 or VAL(YR$)>96
THEN RESTORE:GOTO1280
1460 IF YR=4 OR YR=8 OR
YR=12 or YR=16 THEN DY
(FE)=29 2050 DATA "1981 AND
1996"
```

Robert Nickisson

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## The two power programs \$59

Our book **Treasure Chest** for C64/128 is still available. It is a compact and handy guide full of unusual programs, sub routines and programming hints. Learn to use POKE PEEKS USR SYS and other tricks, buy the book and get free Lotto Analyser, Typing Tutor or Maths Tutor on disk or tape.

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# Letters

## Mouse problem

I have a slight hardware problem that someone at *The Australian Commodore and Amiga Review* or a reader may be able to help me out with. The problem lies with the buttons on my mouse (I own an A500). Sometimes, when I try to pull down a menu or drag an icon, the connection in the button I am holding down at the time will break slightly, dropping the icon or releasing the menu at precisely the wrong moment. This happens even when I am holding the button down quite firmly. Has anyone got a solution which doesn't involve sending the mouse back to Commodore or attacking it with the blunt end of an axe head?

Pete Johnson  
Frankston

*Mice have been known to play up - but you must also take great care when moving the pointer. One slip to the left or right of the menu bar you are currently on and away she goes. As for a fix - open your mouse and check nothing has juggled loose - this is often the cause of the problem. Otherwise I suggest you pay your local service centre a visit. Don't be afraid to try yourself first. - Ed.*

## Shareware pirate

I was somewhat surprised to read a little bit about a certain party in your June issue on page 16, *Amiga Review*. Well, talk of pirates is fine, but what about the shareware pirates. I sent a shareware cheque and a new freshly formatted disk. The cheque was duly cashed last January. Repeated letters and phone calls to the man added to my loss. I am a war disabled pensioner.

Nothing but promises. No updated disk, no manual. Three months ago, I wrote my last plea, and a few weeks later he phoned me up. He agreed he had been lax, and again said he was about to send the utility disk and manual. Result nothing. All I can say is TUT TUPP, then you will know to whom I refer. What's happened to good old fashioned honesty?

H. Greenhaig  
Beldon

*Shareware has its problems. Most people don't pay to use it - and since the person offering the program is only doing so on a part time basis you can't really expect anything amazing in the way of support. A fair and valid complaint though, and one that shareware authors should read and consider before making their next program available in this fashion. Perhaps they should distribute their software through a more reliable means such as our Amiga Live! disk magazine - you get the support and they get the money. Comments? - Ed.*

## Upgrade

I have just taken out a subscription to your brilliant magazine and was wondering if you could answer a few questions I have. I presently own a C128 and am thinking of upgrading to an Amiga 500. Firstly will my present 1901 monitor work with the Amiga? If so how well? And secondly, will my MPS1200 printer work? I have heard that the Amiga 500 has a bad habit of breaking down a lot, is this true? Any answers to these questions would be greatly appreciated.

Paul Matthews  
Newcastle

*No, the monitor is out. Any*

*parallel printer will work fine. And no the Amiga 500 doesn't break down any more so than any other similarly priced home computer. All new brands tend to suffer a high rate of problems to start with - but usually once the bugs are ironed out these are few and far between.*

*If anything is likely to break it will happen in the warranty period. In this time the chips settle and obvious problems show up - try leaving your A500 on for a few days when you first get it - that will help things along. (Don't leave the monitor on unless you have a program like Mackie which blanks the screen - Amiga Live! Issue One). - Ed.*

## Virus

I read with interest your editorial in the August issue of *Amiga Review*. In this article you mention the new virus that writes to hard drives, and state that the total number of viruses known in Australia is four. I am writing to inform you that there are many more viruses than this, as I personally have come across the following eight viruses in my nine months as an Amiga owner:

The original SCA virus;

Two different varieties of the BYTE BANDIT virus;

The CCW virus;

The ABC virus;

The AEK virus;

The OBELISK virus (the one you refer to which edits the contents of hard drives);

and one other whose name I can't recall.

You also may or may not be aware that one of the Byte Bandit viruses is often responsible for write errors once it is in memory, and it often scrambles files on disks inserted as well as writing itself onto them. I am not stating that this is the cause of ALL problems with R/W errors (in reality it would only be the cause of a minority of errors), but I think that you should

not label information as "ridiculous" until you know for sure yourself. I have personally had several disks damaged by the Byte Bandit.

The bottom line is to keep your disks write protected unless you need to save something onto them. If you do need to save onto a disk frequently (i.e. when word processing, etc.), then do a cold boot.

I hope this information has been helpful.

Jason Price  
Engadine

*It is true that there are many strains now appearing - keep in*

*mind that what you read is sometimes a month or so old by the time it's published. We like to confirm the characteristics of a Virus and fully confirm its existence before announcing that it is out and about. The exact effects of each strain can only be ascertained after study in a controlled environment - not just from the comments of a few users who may all be suffering from a similar problem such as drive mis-alignment. Thanks for the warning - we look forward to receiving a copy of the versions you mention on disk for analysis. - Ed.*

User-friendliness is one of the reasons the Amiga is so popular with end-users, and *Tricks and Tips* explains to the AmigaBASIC programmer how to use the system's routines in BASIC programs for sliders and simple animation. AmigaDOS from AmigaBASIC is also discussed, and many programs are provided that pick up where AmigaBASIC leaves off.

For the dabbler in machine language, there's a section on how to pass values between AmigaBASIC and your ML routine. The Workbench is also covered, and this section includes a few surprises: how to find out the names of the people responsible for the Amiga. Designing weird icons not normally allowed through IconEd is easy with *Amiga Tricks and Tips*. Creating the answer to those system errors, Requesters, are also explained.

There is an enormous amount of information in the 340 page *Amiga Tricks and Tips*, and it's all well presented and explained. The book is bound in the usual paperback way, meaning it won't lie flat on a desk, but a trip to the local printers will fix this. Just about everything that has ever been asked by a BASIC programmer is answered in *Tricks and Tips*, in a clear style, yet there is plenty for the more advanced programmer to play around with.

*Amiga Tricks and Tips* is distributed by Pactronics for around \$50. The optional disk should be available mid-September with all the programs typed in ready to go, but I haven't seen it as there have been some problems with it. A good book worth having.

Publisher: Abacus. Australian Distributor: Pactronics (02) 407 0261. ■

# Amiga Tricks & Tips

by Andrew Baines

A host of new books for the Amiga have hit the streets in recent months, all aimed at helping the new Amiga owner understand their complex machine. *Amiga Tricks & Tips* goes through many aspects of the Amiga, in great depth, and explains how and why things work, not just 'this is how you do it'.

The book starts off with a chapter on the CLI, how to use it, programming your own startup-sequences, and answers many questions about the CLI that Commodore have neglected in their scant introduction manual. The questions are all very relevant to the new Amiga owner, and the book goes into great depth answering them, using examples and tutorials: type this, and this happens.

The second chapter introduces the idea of libraries in AmigaBASIC, and presents several very useful programs that are easily understood, and can be used in other programs without any problems. Typing all of the programs in the book into the computer would be a waste of time as Abacus has made them all available on a disk which should be available from the Australian distributor

## Amiga Tricks & Tips



Abacus  
A Data Becker Book

Pactronics when this goes to press.

*Amiga Tricks and Tips* caters for all Amiga users, as there are very technical parts as well as interesting trivia like how to turn the power light off without using the Amiga's switch. Before we go any further, there are errors in the book. I've typed in a number of programs, very quickly, and a number of them gave me the dreaded Guru, but Pactronics tell me that the disks will have no bugs, and that all the problems have been ironed out.



# KindWords

**T**HE WORST THING about *KindWords* is the name. What self-respecting macho Aussie male would even go near it? Word processing for wimps. But of course, you can't judge a book by its cover - nor a computer program. Deep down, *KindWords* is quite an impressive product.

There are a number of advanced features. Graphics and text can be combined, in up to 16 colours. There are multiple font styles, with dramatic "SuperFont" printing. Spell checking and mailmerge features are standard, and the program is easy to use. So it's just a matter of getting used to the name.

Program control is straightforward, with the typical Amiga mouse and menu system used to the full. However, every menu command has a keyboard equivalent, giving the best of both worlds. Many keyboard commands are now almost standardised, and *KindWords* does not rock the boat. Press the left Amiga key with "S" to save, with "X" to cut - just like *Excellence!*

The FILE and EDIT are pretty typical too - though the "SCREEN COLOURS" selector in the FILE menu lets you choose 4, 8 or 16 colours for the screen display. These determine how imported graphics will be displayed. Beware of the UNDO TYPING command in the EDIT menu - I just undid half this review, and

by Phil Campbell

couldn't get it back.

The LAYOUT menu is comprehensive - PAGESIZE and FORMAT commands let you set all page variables, and there are presets for every imaginable page size, including our favourite A4. A pity some of the fancier programs didn't do likewise. Not mentioning any names, but frustrated *Excellence!* users may like to know that A4 paper is exactly 11.69 inches long.

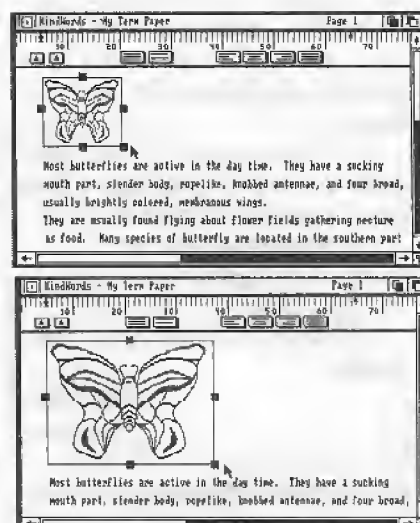
The FOOTER function is unusually flexible. Up to 15 lines of text can be defined, giving plenty of room for essay footnotes and the like. The process is manual, but pretty easy - a window opens for the footer text, which you then treat as a separate document. This is a good compromise for those who don't need the fancy auto footnoting features of a program like the aforementioned *Excellence!* or the now seldom-mentioned *Word Perfect*.

## SuperFonts

The FONT menu is the strength of *KindWords*. Here at last is a program that means business in the printout department. Everybody knows that Amiga system fonts stink. And at last, somebody has done something about it.

*KindWords* starts from scratch. No system fonts. Instead, a whole new printing system which gives ultra high resolution printout, from even the most humble dot matrix. This is genuine Near Letter Quality.

But now the bad news. Printing a page takes all day... four passes of the print head are required for each line of text. And there are only three text fonts - Roman 8, 12 and 14. Not nearly enough. Besides, Roman 8 is

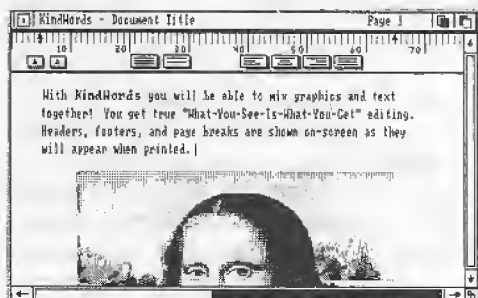


too small, and Roman 14 is not really big enough. The other two fonts - foreign and symbol - are almost useless. Okay... I'm a whinger. And I guess more fonts will be released on a separate disk. As long as it's soon.

SuperFonts deserve to be taken seriously. In fact, Commodore should take a good hard look at the system, and include something similar in Workbench 1.4 - that's an order, guys. I am sick of being embarrassed by third rate print quality. In the meantime, if *KindWords* issue a few more fonts in decent point sizes they will have a captive market. And even better, how about a Superfont Editor?

Pictures can be slipped into your document wherever you wish, as long as you don't want text in the same general area. I imported a 16 colour *Deluxe Paint* file with little trouble - the colours appeared on the screen just as they were in the original. Resizing is supposed to be easy. Unfortunately, the first time I tried it, everything else stopped. Permanently. Reboot time, and back to square one with my review. That's life.

*KindWords* sets new standards in output quality and flexibility - standards that should be followed by everyone else. Add a standard selection of wordprocessing features, and you get a better than average program. In summary, not many HarshWords for *KindWords*. Hmmm... maybe I should rephrase that.



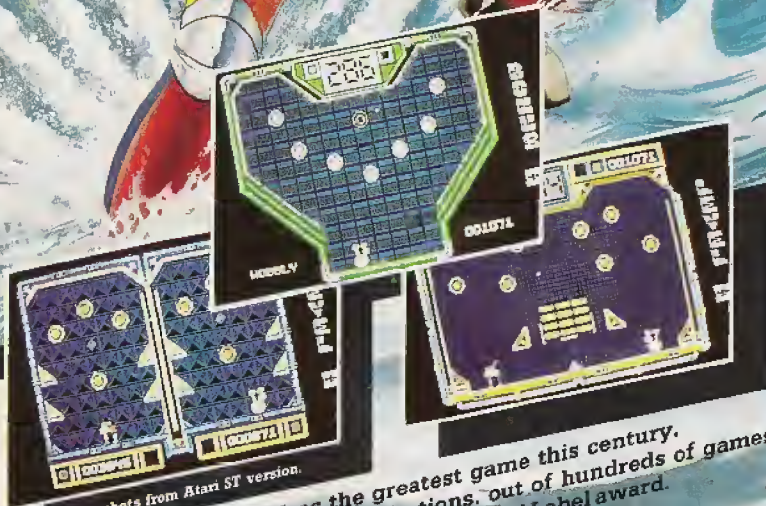


# Are You Good Enough to TACKLE

STAR  
BUY

There is so much in Hot Shot - you need to be a crackshot, a pinball wizard and an ace controller. Have you got what it takes to beat Hot Shot?

GOLD  
LABEL  
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Screen shots from Atari ST version.

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No.1

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# Publisher 1000

A good desktop publishing package for the dot matrix owner

by Greg Munro

*Publisher 1000, from Northeast Software Group, has been around for some time. It is now being eclipsed by newer, more powerful (and more expensive!) desktop publishing software. As it enters the "slightly superseded" category, budget conscious Amiga owners should be on the lookout for discounted copies of this excellent program. I picked up mine at a sale for less than one third RRP.*

THE FIRST THING you notice about *Publisher 1000* is that Northeast Software chose to write their manual in English. Too many manuals are written by people who communicate best in machine code - the sort you ignore until the smoke rising from the machine forces you to consult them! For those with itchy mouse fingers, the *Publisher 1000* manual begins with a sample exercise that has you printing out your first project within the hour. Although concise, it explains the program well and even throws in a bit of printing history and terminology. There are some errata, but these are corrected in an addendum.

*Publisher 1000* uses the standard window, with scroll bars, sizing gadgets and pull down menus, familiar to any user of wordprocessing or DTP software. Everything can be done via menus, with optional key commands for some functions. There are eight menus: Project, Place, Guides, Edit, Tools, Display, Pattern, and Attributes. "Project" has the standard New, Open, Save As, Print, and Quit options. Likewise, "Edit" has what you would expect in an Edit menu - Cut, Copy, Paste, Reflow Text, etc.

The work page is simply a blank white background, upon which you can place as much text, lines, frames, borders and graphics as you like. *Publisher 1000* works in Medium Resolution, so your screen allows you to see one eighth

of a page at a time. This is not a problem, since you can survey your potential masterpiece in its entirety by scrolling around. Or, you may select Full Page from the "Display" Menu, which will

your page. You may choose measurements to be displayed in inches, picas, or millimetres - a nice touch!

The "Guides" menu allows you to create and place any number of movable,

**"Get Image enables you to import data from any painting or drawing program that stores files in IFF."**

give you a quarter-screen sized picture of the whole page.

At the right hand side of the Title Bar, near the page number, are a running set of X,Y co-ordinates. These, together with optional grid and ruler-cursor, allow you to precisely align the elements of

ble, resizable boxes. These guides, which disappear when you print your project, are for "pouring" text into from your favourite wordprocessor by selecting Get Text from the "Place" menu. *Scribble!* and *Textcraft* documents may be imported as such. Documents from other wordprocessors must be imported as text only and edited with *Publisher 1000's* Text Editor. Unlike *City Desk's*, this editor is a real one, not just a toy!

Text may also be entered directly into guides using the Text Editor, and for smaller blocks this is quicker than doing it on your wordprocessor and importing it. Text may be flowed from one guide to another, and from one page to the next. You can also let *Publisher 1000* set the page for you with any number of equal columns.

One of the best things about *Publisher 1000* is that it has several fonts specially designed to look good when printed with an ordinary dot matrix printer. Since the fonts are loaded from a directory, accessed by choosing Fonts under the "Attributes" menu, you should be

## Publisher 1000 imports any IFF saved Graphic from your paint programmes!

Just a few of the 91 borders available!



One of the best things about the desktop publishing package is that it enables you to import data, not just from a wordprocessor, but also from any painting or drawing programme that stores files in IFF format.

The images on this page were created in colour on the desktop. An image drawn in any screen mode may be imported into your Publisher 1000 page. Since P1000 works in medium resolution, images created in interlace or high res give the best results. As you can see by comparing the picture of Bobette below, drawn in high res with Mariene and Lotus below, drawn in low res.

Pictures may be resized or cropped according to what, which is a good thing, since those made in other than med. res appear disproportionate when first placed on the page. As the picture of Mariene opposite should.

The only slight drawback is the length of time it takes the computer to turn the colour images into B&W - up to several minutes - but the results are worth the wait!

Surprising enough, Publisher 1000 fires up to its dam to work well with the basic unadorned x500, such as mine. (Ick, no GIFs.)

However, the only really annoying thing about it is the way it stores each page of a document as what is practically a separate file, making it necessary to access the disk a lot in order to change pages or flow text from one to the next. Which is why I use the 'Print Document' button can you 'Print Document' but only one page at a time.

Well I had a hard disk - P1000 would be great on one. Oh well, can't have everything I suppose.



able to copy others into the Fonts Drawer, or load them from another disk.

The other option under the "Place" menu is Get Image. And this is where *Publisher 1000* really shines! Get Image enables you to import data from any painting or drawing program that stores files in IFF (such as *DeluxePaint*). Colour graphics in any resolution may be converted by *Publisher 1000* into shades of grey and incorporated into your project. It does take several minutes to reduce complex High-Res colour images to grey, but the results are worth the wait! There is almost no wait at all for monochrome graphics.

Graphics do not need guides like text, but appear hanging off the cursor in their own box. Pictures may be reshaped, resized or cropped according to whim. This is a good thing, since those created in other than medium resolution appear disproportionate when first placed on the page. High and Medium resolution pictures give the best results. Low resolution tends to lose detail, especially in pictures with not many dark colours.

Using *City Desk* with my humble 512K, I keep getting those infuriating Out Of Memory messages. Not so with *Publisher 1000*. I was able to create complex pages with multiple pictures, text, borders, frames and lines. I could save them, and print them out, with no problems. Northeast Software's claim that it was "designed to work well on a single drive Amiga with 512K RAM memory," is justified - with one exception. The only really annoying thing about *Publisher 1000* is that it saves each page as a separate file. With one drive this means swapping disks five times to flow text from one page to the next! It also means you have to print a document page by page.

Changing pages is one of only two things in which *City Desk* wins hands down. The other is that it supports the PostScript laser printer language, which *Publisher 1000* does not. You can still use any laser printer you have a driver for, but you won't be able to take advantage of the printer's fonts - letters will appear jagged just like on a dot matrix. Ditto for graphics. This is one big reason that *Publisher 1000* does not compete as a publishing tool for the "Serious User", and will be left for less serious users like me to find at clearance sales for bargain prices!

The final test of any desktop publisher is the copy buzzing from your print head. *Publisher 1000* produces excellent results with a dot matrix printer. If you own a laser printer or a colour photocopier then buy something better, such as *Page-setter Professional*. But if you're just an average Amigaphile with a dot matrix, producing newsletters and advertising for your club or church or business, then *Publisher 1000* is worth getting hold of. And to any one who only has *City Desk* - you don't know what you're missing! ■

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# Driving the AST Turbolaser

## PS Postscript laser printer

by Tim Strachan

**F**OR ABOUT a year, I've coveted a postscript laser printer, the high end of laser printers, and it finally arrived. This is an American machine, imported and distributed by Imagineering in this country, and it's a heavyweight in terms of performance and price. As a preamble, I'll describe some of these terms, for those who aren't sure.

Laser printers come in many shapes, but there is a fundamental divide between those which have the page description language Postscript (by Adobe), and those which don't, such as the Hewlett-Packard and compatibles. The hardware is essentially the same, but it's the software which makes such a difference in price and quality of output. You can get HP lasers for around \$5000 or so, and they do a pretty good job of printing text and limited graphics. They have minimal RAM installed, and to access a variety of fonts, you need to download them to the printer, and you need a printer driver on your system disk (standard on Amiga Workbench).

Postscript, a programming language created by Adobe, and licensed by them to manufacturers of laser printers, allows you much more flexibility in desktop publishing. The AST has, for example, 35 fonts sitting in its memory which can be accessed if you're using a DTP program which is set up to use them, such as *Professional Page*. You simply choose the fonts and point sizes from within the program as you're designing your page, and print. Likewise, graphics are handled with greater ease, and the 3 Meg of RAM built into the printer provides the large amount of space required to process the huge graphic Postscript files.

These uses are standard, automatic

uses of Postscript, but it is also a programming language, which means you can prepare a Postscript file manually with a text editor, or make changes to an existing one, and then simply send the file through the serial port, as follows: > copy postscript.file to ser:

Further capabilities include full page manipulation - LaserScript, which operates as the Postscript interface to Gold Disk's *Pagesetter* program (the precursor to *Professional Page*), allows you to create all kinds of effects, such as changing the size of a page and rotating it, or even doing the same with a number of different pages on the same output page.

In short, if you're serious about Desktop Publishing, and have the money, you should use the power of Postscript.

### The facts about the Turbolaser

The printer is about the size of a serious photocopier, coloured in about the

same beige as the Amiga, and sports a paper tray which can take up to 250 sheets. It has 3 Meg of RAM for processing documents, and 1 Meg of ROM (Read Only Memory) for its internal fonts.

The manufacturer's blurb claims a speed of eight pages per minute, but like every other laser printer I've tried, this is rather misleading, since it measures the speed of copies of the same page, once all the processing has occurred. So if you're printing out a series of different pages, each one will take up to a minute (or more with a page which has a number of font changes and/or graphics).

The laser engine used is a Ricoh 4081, said to be one of the best available.

The manual also claims that either a serial cable or Centronics parallel cable can be used to link it to the computer, but I tried two different parallel cables without any joy - parallel would be better than serial, since more information is going to the printer in parallel than via a

*The AST Turbolaser printer*





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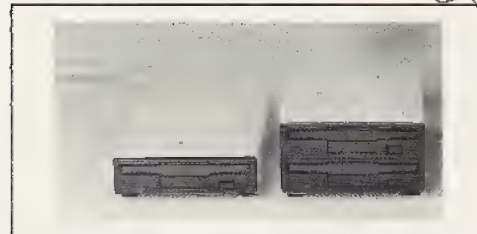
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serial cable. No cables came with the printer, so one had to be made up, and it worked fine, being essentially a null modem cable which also works from an IBM serial port.

It should be noted that the first machine that arrived had some sort of obscure error flashing on the LED control panel. A call to Imagineering resulted in instant action, and a second machine arrived the next day by courier, which has worked without a single glitch.

The printer was tested with *Pagesetter*, *Professional Page*, and the recently released word processor *Excellence!*, which can also handle Postscript, which puts it into the semi-DTP category, and all three spoke amiably to the printer.

As I experienced with the Apple Laserwriter Plus, which is comparable with the Turbolaser in most specifications, it sometimes happens that an attempt to print out two or more pages in a document results in the printer giving up after the first page. This may be due to an overload on the processing power of the printer, and it is generally best to send pages to the printer one at a time. Likewise, if you send it a page with a lot of different fonts and/or some graphics, you may find that a couple of attempts are necessary.

Further fonts are available for the Turbolaser, beyond the resident fonts which include: Helvetica, Times, Courier, Palatino, ITC Avant Garde, ITC Bookman, ITC Zapf Chancery, ITC Zapf Dingbats, Helvetica Condensed, and New Century Schoolbook. The engine should print up to 600,000 sheets if properly maintained, and the printer can be upgraded to a Turbolaser/XL, which provides the new Lasergraphics language, Diablo 630 or Epson MX or FX printer emulation, and emulation of some plotters, giving the capability of using the printer for output from CAD packages.

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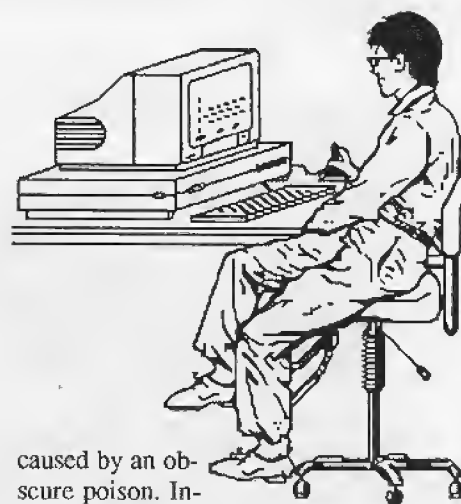


# Clicked on Games Clicked on Games Clicked on Games

## Carrier Command

by Eric Holroyd

AMIGA



**T**HERE'S A LINE worth quoting on the first page of *Carrier Command's* manual. It's in a message from the Fleet Admiral to the ship's Commander and says "... highly confidential and sensitive information... must not fall into the hands of dangerous and irresponsible persons... politicians and journalists..."

The message goes on to tell how reports of unpredictable tidal activity in an area near Gamma Base resulted in the discovery of a number of small volcanic islets which had emerged from the sea due to huge movements in the Earth's plates. Scientists reasoned that all this happened because of all the underground nuclear weapon testing and they expect many more of these islets to emerge as they're part of a geological fault. All of this is presumed to be very dangerous because of the energy trapped within the fault.

It's been decided to harness the energy by building power stations and command

centres on the islands and two huge ships have been commissioned to carry aircraft, amphibious tanks and building machinery to the islands. They're also fully equipped to act as a defence force if need be.

The contractor building the two ships was Draziw Industries who were the only ones capable of making all the equipment and its ancillary service droids. They finished the first ship, the ACC Epsilon and found that the design needed modifications (sorry about the long-winded explanation but it's necessary and we're nearly there now!) and incorporated these into the second ship, ACC Omega, to make it fully computerised and droid-controlled. There wasn't time to do the mods on the first ship as they had to set sail for the project.

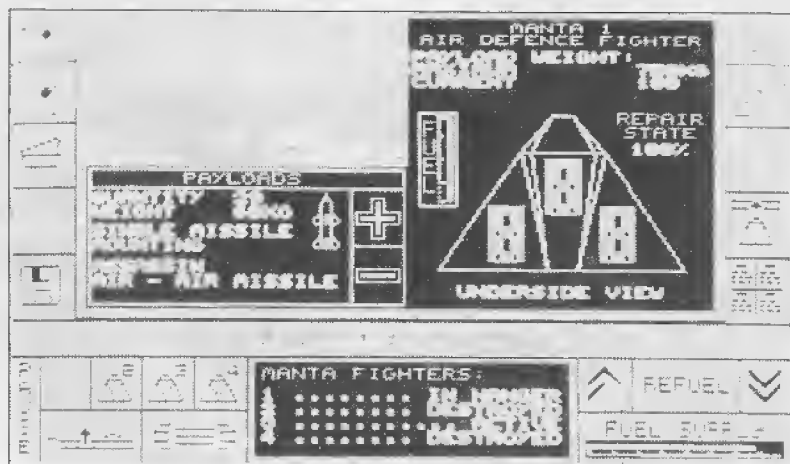
During the final sea-trials of the Omega the Assistant Chief Engineer of Draziw Industries was found dead in his office. His death was found to have been

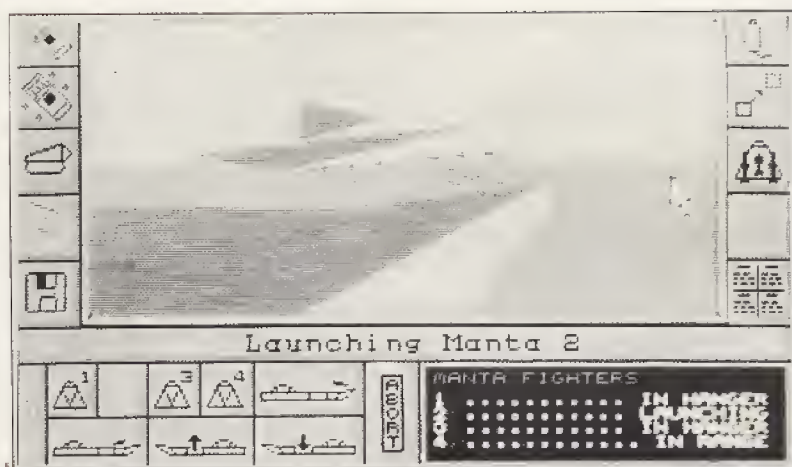
caused by an obscure poison. Investigations pointed towards one of the programmers working on Omega but he suspected they were on to him and fled. The following day the Fleet Admiral got a message from him saying that whilst he was building the Omega's computers he'd modified them to put the ship in direct control of the STANZA organisation which was now demanding \$15 billion within 72 hours or it would activate the Omega's programming to occupy and destroy all the volcanic islands methodically.

As the two ships are identically armed and both carry Manta fighter planes and Walrus amphibians they're pretty evenly matched. Nevertheless, you as Commander of the ACC Epsilon have the responsibility to attack and destroy the ACC Omega before it does the dastardly deed. Bear in mind that you can't drop a nuclear bomb on it because of the danger to the already-damaged Earth plates.

There's going to be a lot of strategy involved in doing your job but you do have the Chief Programmer of Draziw Industries, Dr Oliver Baird-Onions (what a name!) to help and he believes a lot can be done by pitting his wits against Omega's computer. He's already using a Remote Reprogramming Pad and has written a "virus" which he's introduced into the Omega's Command Centers...

There's much more information along these lines in the excellent 64-page manual with much pictorial information about your Carrier. Such things





as Radar, Helm and Speed, Fuel, Navigation etc are clearly shown and explained, as well as the various islands locations and functions (base, stockpile, factory etc).

It's a most interesting game, and as I read the manual all the way through before booting the disk (I really did!) I expected it to be something like a glorified

text adventure. How wrong I was! There are some really great graphics and it's fun to play too. Just point and click on the various icons, then watch the action. For added atmosphere play the music tape that comes free with the program. This is the Carrier Command Theme and is an extended stereo version.

There's a very good picture of a fighter plane taking off from the carrier which comes up almost immediately when you boot the disk. I read somewhere that Jim Sachs (of *Saucer Attack* fame) was doing this kind of instant load pic and that it used the boot-blocks to do it. The message is then, beware the Viruses (Virii?) which write themselves to the boot-blocks and which would make useless this program and many others. Psygnosis games use the bootblocks, for example. Mike Hansell's *Dutits* program lets you keep a backup of the bootblocks just in case you do get a virus.

Space doesn't permit much more about this excellent simulation, but if you're a *Gunship/Up Periscope/Flight Simulator* fan then you'll absolutely love this one. I reckon it's worth 9.5 out of 10.

Review copy from Questor (02) 662-7944, Amiga RRP \$69.95. ■

## Zoom AMIGA

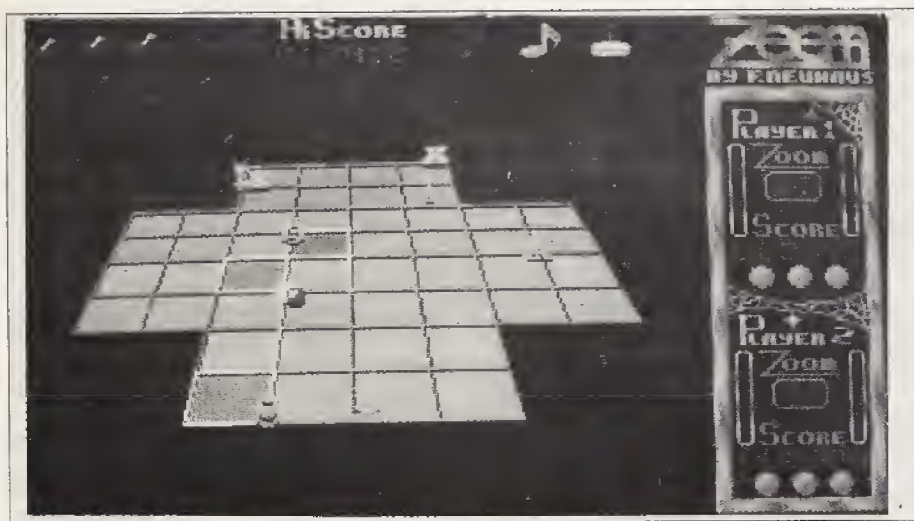
**W**E RARELY SEE a game that boasts originality such as this. *Zoom* combines the best features of several older games along with some fresh ideas producing a very appealing program for all age groups and sexes.

Play begins with a sequence of pacman dancing about the screen to cat calls and cheers from a hidden audience. You can choose from three play modes:- one player, two player and two player competition. On screen you are a small ball no doubt related to the original pacman but a whole lot bouncier. Rather than eating dots your objective is to fill in every square on the grid displayed by drawing a trail around each one.

Cruising around the grid are several nasties to be avoided. A single touch and your man pops into nonexistence. Dozens of

bonus points may be scored and various novelty attractions appear making the game exciting. To protect yourself you can knock a small hole in the grid behind you slowing down the *Zoom* is played on a virtual 3-D perspective view of the grid which comes spinning into play at the start of each frame. Attractive graphics and comical sounds added to a pleasing presentation and game design make this one a winner.

Although the ideas are really just souped-up from older programs, *Zoom* has a pleasing feel of uniqueness. Addictive, entertaining and top value, our review copy came from Ozisoft (02) 211 1266, RRP Amiga \$69.95. ■



# Pandora

by Eric Holroyd

AMIGA & C64

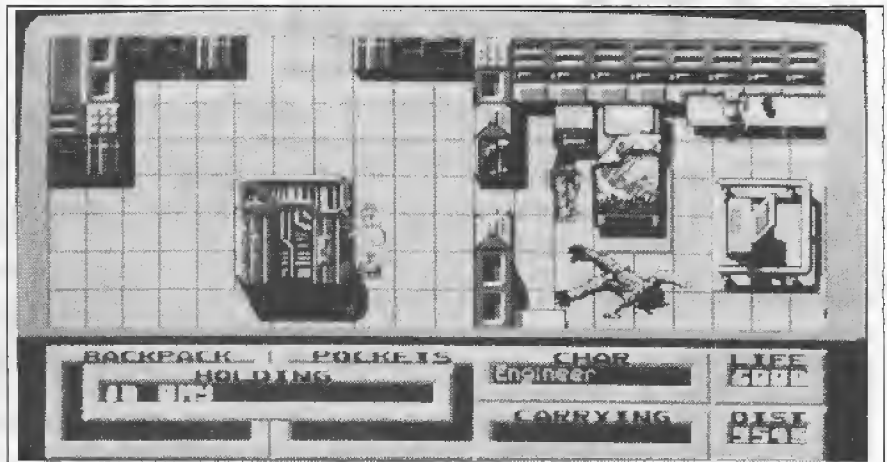
**T**HIS COMES FROM Firebird/British Telecom and is a combination of strategy, trading and fighting, but not necessarily in that order.

It's all about the 22nd Century return to Earth of spaceship *Pandora* which departed on an eternal galactic cruise in the late 20th Century (I wonder if they allow smoking on their flights?) and which was supposed to be still roaming in space. For some unexplained reason it's coming back and neither its intentions nor the contents of its holds are known.

It's all a mystery and your part is that of a Mercenary Shock Trooper trying to solve it. You'll need to search *Pandora*, then scheme, fight, trade and otherwise connive to save the world from what is almost certainly an alien invasion in a modern-day Trojan Horse.

The screen is split into two sections: the large Play Area and the small Display Panel which takes up the lower third of the screen. Here you can check your inventory (by pressing the spacebar) for objects being carried, picked up, traded or even (believe it!) taken from dead characters! There's a special bit in the instruction sheet telling you how to access the dead character's inventory as well as your own. Talk about necromantic!

It's quite an absorbing game, the graphics are very good and well up to the standard we've come to expect from Amiga software. Sound FX too are good and there's some great music played over the opening titles.



The game's Play Area is in plan view and I was most impressed with the detail as I explored the ship. Doors opened automatically for me to go into various rooms and the furniture etc in these was extremely well drawn. Desks, swivel chairs, bunks, bedside cabinets, computer terminals (gain knowledge by interrogating these for clues - sort of *Impossible Mission* in space) and benches etc were all realistically portrayed.

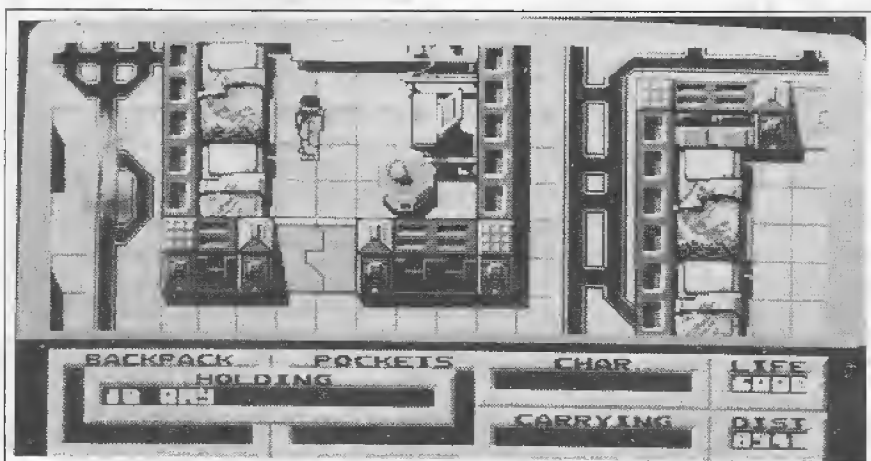
There's plenty of different characters aboard *Pandora* to trade with if they're friendly or to fight with if they're not. In my first foray I fell foul of a punk/hooligan complete with multi-color Mohawk hairdo who jumped around kicking door panels in, then did the same to me! He was carrying the "Iridium Mace" said his message-window so I'll have to watch out for that next time.

I met up with, and dodged, some alien nasties wandering the corridors and eventually the sound of music drew me to a bar-area. The music got louder as I got nearer (very clever, that) and I went in to have a look round. I met the piano player and one other musician, then left the bar to search *Pandora* some more.

Trading games as such have never been a particular favorite with me, but in *Pandora* that's only part of the picture. The other elements give the game lasting interest and I certainly liked it a lot. I'd give it 9 out of 10.

Thanks to Questor (02) 662 7944 for the review copy. Amiga RRP is \$59.95.

*Pandora* is also available for Commodore 64 at RRP \$39.95. ■





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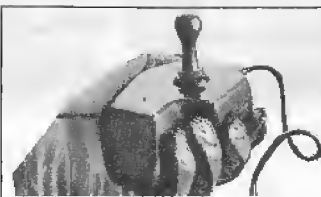
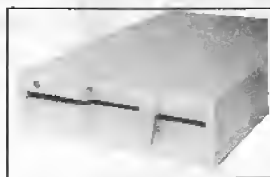
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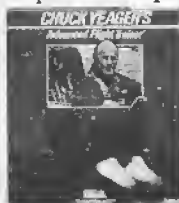
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Oct. 88

# Wargames: Silicon Valley gets trigger happy

by Dan Gutman

**S**ILICON VALLEY has gone trigger happy. Computer simulation of war is the latest trend in computer entertainment.

In the last few weeks alone, these new programs have fought their way into my mailbox:

*Decisive Battles of the American Civil War*, *The Hunt For Red October*, *Patton vs. Rommel*, *Global Commander* (all from Electronic Arts, ECP). *Warship* (Strategic Simulations Inc., Ozisoft). *The Universal Military Simulator* (Rainbird, Questor).

Napoleon rates two new games, *Battles of Napoleon* (SSI, Ozisoft) and *Napoleon in Russia* (EA, ECP). You can even create the fantasy war of your dreams with *Wargame Construction Set* (SSI, Ozisoft).

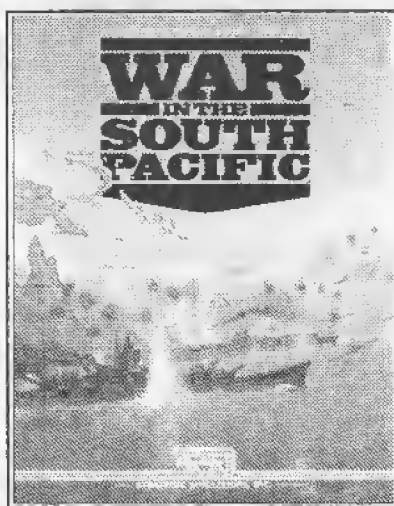
It's always been a dangerous world, but for the first time in decades, our nation is enjoying relative peace. Yet we're deluged with fake wars we can "play" on computer screens. Is this sick, or what?

"No more than when someone enjoys watching a war movie," says Bob Guerra, author of the new book, *The Electronic Battlefield* (Compute Books). "When you break it down, war games are no different than chess."

According to Guerra (hey Bob, isn't "guerre" French for "war"?), there are 300 to 400 computer war games available, about half of which have been released in the last two years. The games are popular with computer owners all over the world. In fact, East Germany recently banned war games produced by Microprose Software (Questor).

Guerra divides the category of war gaming into three types:

1. First person simulations: You're in the plane, boat, or tank shooting at somebody. (Guerra recommends *F-15*



*Strike Eagle* and *Gunship* by Microprose, Questor).

2. Map-based games: You're a commander moving large groups of men. (*The Ancient Art of War* by Broderbund Software, Questor).

3. Geopolitical decision making: Your choices determine whether war actually takes place. (*Balance of Power* by Mindscape, Questor).

Good wargames are not like traditional arcade games - you don't just aim and fire. The games are incredibly complex. Players often need to take into consideration weather, terrain, weapons, morale, fatigue, and supplies in planning their battle campaigns.

A recent trend in war gaming is programs that duplicate actual battles that have taken place in history. Fans of these games consider *Gettysburg: The Turning Point* (SSI, Ozisoft) to be particularly well-researched and remarkably accurate.

The same company has simulated the Battle of the Bulge, Vietnam, Arnhem, Antietam and their catalog lists 33 war

games.

"It's all mathematics," says Guerra. Players have to calculate the force of guns, strength of the enemy, and other factors. When something shoots at something else, the computer determines the outcome depending on mathematical algorithms. The most important weapon in your arsenal may be a pocket calculator.

"I think it's a good challenge for people who really enjoy trying to process as much information in their heads at one time," claims Guerra.

Consequently, the instructions that come with these games are even more intimidating than the usual gibberish, some say intentionally so. "There's almost an elitist attitude," claims Guerra, "like they don't want everyone to figure it out."

He names *Mech Brigade* and *Kampfgruppe* (both SSI, Ozisoft) as particularly convoluted.

The question is, why are these games so popular? If war is hell, why do people want to spend their leisure time pretending to fight?

"It's drama," says Guerra. "There are good guys and bad guys. Often you have to overcome overwhelming odds, just like in other stories."

"For many of us with parents and grandparents who fought in the World Wars, playing a war game is a way to understand some of that."

"I think people misunderstand war games. They think that if you like war games, you like war. But you can have a fascination for something and enjoy these games while still realizing how despicable war really is." ■

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# Starfox

by Eric Holroyd

C64

**Y**OU ARE HAWKINS, ace pilot of the fabulous *Starfox*. Your mission, to enter the fabled Rubicon Cube, discover the eight planets, pursue and destroy the mysterious ninth planet and restore peace to the Hyturian System. If you think that sounds easy you had better apply for an apprenticeship with NASA.

Your craft is fitted with a K.Mart type laser MK1 but it does work, at least it's OK for the first level. The aim of this level is to hone your flying and shooting skills and generally learn to fly this famous ship.

Navigation within the cube is somewhat tricky, with a rotating holographic image which can be zoomed for more detail. If you accidentally approach the edges of this world you are told 'mission incomplete', unless of course you have completed it.

Level one requires that you destroy the enemy convoys until you are given the 'mission complete' message. Planets can be visited for repairs, refuelling and updating of the weapons system. Each planet has eight weapons available, but you will only be offered the weakest ones.

The approach to the planets is tricky - first wait till your detector shows 'planet near', drop out of turbo and seek the 'wormhole' which leads to orbit above the chosen planet. Once in orbit you must then find and dock with the mothership by positioning your ship in front of it. If you are correctly positioned then the tractor beam will lock onto your ship

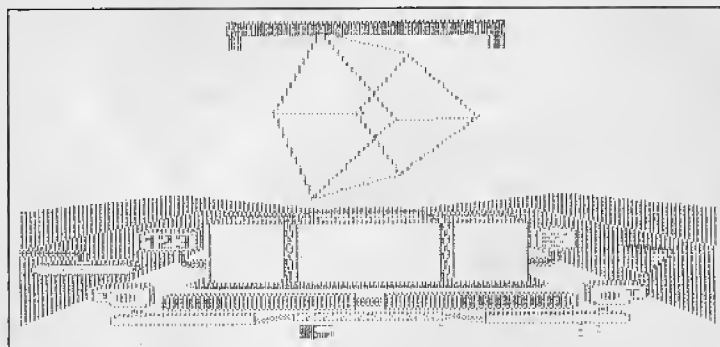
and you will be docked.

Flying around in cubic space you will encounter convoys of ships, planets and occasionally the odd fuel ship can be found. Pressing F when the 'fuel ship' message is delivered will top up your tanks. You will also encounter ice and electron storms - these can be very damaging to your craft, often leading to the dreaded bouncing ball of the 'game over' screen. You must always turn off your turbo boost when meeting such storms otherwise destruction of the ship will be very rapid.

Two ship's logs are available. The information log contains just that, along with details of attacking ships, approaching storms etc. The planetary log contains information and co-ordinates of the various planets, the auto-pilot controls and enemy locations. Both logs and the holo-cube viewer act as a pause mode along with the back-arrow key for true pause mode and save game menus.

Graphically the game is somewhat dated, with the enemy ships being very blocky sprites and the cockpit scene reminiscent of many other flying, shooting, exploring, dodging simulators.

Where the graphics do stand out is in the excellent view screens, you are treat-



ed to almost 360 degrees of vision and when you hit the turbo button the stars scroll by smoothly in all directions. This can be disorientating at first but as with *Elite* you should become accustomed to it. The shooting is accurate and fast but the enemy ships seem to jump about a bit, making them difficult to hit.

Upon completion of a level you then fly your ship out of the cube, where you enter a time-warp which changes your date and location, then you re-enter the cube in a new time and start all over again. On the next level the enemy are better-equipped and faster and so it continues through the eight levels.

In conclusion, *Starfox* is an interesting game with plenty of possibilities and action. The control method is tricky (especially the navigation) but with persistence can be very rewarding. Sound and graphics are slightly dated but the concept is solid, like *Elite*, you can build up a considerable amount of weapons and ability. It's the sort of game which can sit in your collection for a while then suddenly be resurrected for many more hours of fun.

Persistence pays off. It took me several goes before I got the hang of it, so if you play it for ten minutes or half an hour you may not like it, but if you play it for a couple of hours you will see what I mean.

Good luck, Hawkins, you'll need it. Distributed by ECP (075) 96 3488, RRP C \$24.95, D \$34.95. ■



# The President is missing

C64

by Eric Holroyd

ONE OF MY EARLIEST favorites on the C-64 was *Aztec Challenge*, an arcade game which started with you running the gauntlet of spear-throwing natives. You had to duck to avoid head-high spears and jump to miss the ones they threw at your feet. A most addictive multi-level game.

Some time later came *Super Huey*, a quite realistic helicopter simulation in which you first learned to fly a helicopter, then flew actual missions. Great stuff!

Those two programs and many others were produced by COSMI whose latest, *The President is Missing* (produced in conjunction with Microprose, the simulation experts) certainly keeps up the high standard.

It's well-packaged and presented, coming with two disks, an audio cassette and a good manual. There's quite a lot of disk access during game-play and the whole four sides are constantly in use. A two-drive option would have enhanced things but I soon got used to the disk-swapping anyway.

My only other complaint was that the manual says that tapping the Restore key returns you to the Control Screen. This

won't work unless you use it in conjunction with Run/Stop. Apart from those two little whinges I think *The President is Missing!* is a great game.

The scenario is this: The President of the USA, together with the leaders of 10 European nations, have been abducted by "persons with hostile intent . . .". These people appear to be Middle Eastern, judging from the audio cassette. Their long list of demands include: Palestine is to be turned into a republic, the Russians are to leave Arab territories, the Americans are to get out of the Islamic oil territories etc etc.

You are the investigator in charge of the American search to find the President. Much information is already filed on the four disk sides and you're in charge of eight undercover agents who'll follow your every instruction. You'll need data disk(s) to file new information coming in from them too.

You'll study dossiers, aerial and satellite photos, decipher coded messages etc whilst you're monitoring the events of a world crumbling into chaos. The audio cassette is a compilation of news commentaries, pleas from the various hostages and messages from the terrorist kidnappers themselves. This

tape holds many secrets and it's suggested that you listen very carefully to it, maybe several times.

When the program is first loaded you have to go through a "logging-on" sequence and give yourself a code-name and access number. All this is written to the disk so that only you can access (a bit like your PIN

number at the Handybank) which I suppose is quite good anti-pirate stuff, although the disks are pretty heavily protected anyway.

Once you're through to the Control Screen you may go to Files, Agent, Codes or Comms. The first choice gives you eight categories and I chose Subjects which came up with 38 profiles of people under review. The dossier on Secretary of Defence Drake Cadwallader, see illustration, is one of them. Another category was "Photographs" which is where the photo of the President with his captors is filed.

The other six categories in "Files" are: Document, Records, Case Pending, Audio, Reports, and Confidential. It's all very comprehensive and there's much to examine and absorb in your quest.

"Codes" gives you the option of several codes to use when sending information to your agents (via Agent on the Control Screen).

There's so much information crammed into the program and you'll need to carefully assess everything before taking action. Don't forget too, that no-one is above suspicion and everyone from the Vice President down should be given the once-over.

Just for interest, the picture was captured with Super Snapshot and printed with the Cockroach Graphics Utility. I could have done it the other way round or either product would have done the complete job.

I liked this game a lot and can see that it would take many sessions at the 64 to track down the President. I recommend it and rate it 9/10.

Review copy by courtesy of Questor.

Disk version RRP \$49.95 Cassette version RRP \$39.95. ■



# Stepping Up to the Amiga

*As a general rule, new computer owners find the Amiga easy to get into. However, C64 users making the step up can run into problems. Andrew Farrell helps explain some of the differences and how to get over them.*

**T**HERE'S NOTHING similar about the Amiga and the C64 except that each one will undoubtedly be known as one of the most popular home computers in its time - the Amiga is currently becoming that. If you're planning on upgrading or have just upgraded to the Amiga after having mastered the C64 you may well be battling with a whole host of new concepts.

No longer do you have that familiar ready prompt or simplistic disk commands. Gone are the PEEK and POKE functions to change screen colours or keyboard repeat. In this new "user friendly" environment some things may seem to have been complicated for the sake of simplicity that you will not at first realise. The reason is the umpteen times greater power the Amiga is harnessing.

## The Commodore 64

The seven millionth C64 hit the streets earlier this year. Its design was much the same as the original machine that rolled off Commodore's production line some five plus years ago. There is 64K of RAM overlaid by a series of ROMs and the VIC-II chip.

VIC stands for Video Interface Chip. This single silicon wonder produced the 64's famous graphics including the sprites, split-screen capabilities, multi-colour and hi-res mode, collision detection and screen colours. Another chip called SID or Sound Interface Device churned out the amazing tunes we now hear on C64 games.

The C64 doesn't really have an operating system as such. Commands for LOADING and SAVING files are simply a part of the built-in BASIC programming language the machine powers up in. This is a totally different arrangement to the Amiga.

## The Amiga

The Amiga is built around a multitude of specialist chips handling jobs as small as moving memory chunks to as big as playing stereo music in hi-fi quality. To cope with this amazingly complex architecture an even more complex multi-tiered operating system had to be written that would allow all these chips to work together on not just one, but several tasks at a time.

Instead of a mere 64K of RAM we now have up to eight Megabytes or eight thousand Kilobytes of memory. This powerful array of facilities would be no match for a simple BASIC language with its inbuilt file handling commands. Instead a dedicated disk operating system, or DOS, is used which then runs separate programs. One of these programs could be BASIC (which you could then write other programs with) or a word processor.

Since Amiga's disks contain 800K, and quite possibly one of them is a hard drive, much time has been spent in making it easier for the user to organise files into a neat arrangement of directories and sub-directories (or drawers) on each disk. On the Commodore 64 each disk had a

single directory and that was it.

Let's examine this new file storing system and see what the advantages are.

## Sub-directories and drawers

At Workbench level, the sub-directory system is implemented in the form of drawers. If you imagine your disk is like a large filing cabinet, the drawers correspond exactly to the filing cabinet drawers. Inside them you can place files. However you can also place a drawer within a drawer.

The result is an upside down tree. When you click on a disk to see what's in it, the Workbench starts at the root of the tree. To move down the tree you open new drawers and so on. At the CLI level the same principle is used, however special commands are required to move around.

When you first open a CLI window, you're placed in an environment a little bit more like BASIC on the C64. You can now type commands to find out about what's on a disk - however there are no programming facilities as such. You can write a simple batch file which is just a simple list of DOS commands - with a few special extra commands such as IF.

To move down the tree, AmigaDOS uses the CD command, short for Change Directory. This is the same as moving into or opening a drawer. You actually enter CD and the name of the drawer or directory. To move backwards, the com-





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mand is CD /. Here's an example of how a directory tree might look:

```

ROOT (.info files/drawer names)
:
:
-----
:   :   :   :
C   WP GRAPHICS MUSIC
:
-----
:   :
DOCS  ANDREW

```

At the top are the .INFO files which describe file types, and their related ICONs. You'll also find the name of each directory at the next level of the tree.

As you move from directory to directory and drawer to drawer, you may wish to find out what files are in that area of the disk. On the Commodore 64 you had to LOAD the directory using LOAD "\$",8. Any program in memory was probably lost, unless you had a special cartridge or machine language routine.

Now on the Amiga you enter either DIR, for a quick catalog of program names, or LIST for a comprehensive directory including additional information such as file size, creation date and so on. In this way, it's easy to keep things organised.

In the above example, all my personal files could be placed in the ANDREW directory. Later on I may wish to copy these to another disk. Instead of having to know the name of each file, I could just move the entire directory or drawer in one fell swoop. Much faster.

## Booting AmigaDOS

Unlike the C64 which enjoyed a tightly written 16K ROM of BASIC and operating system, the Amiga has around 256K worth of program to control matters, broken into two parts - the Kickstart and the Workbench.

Since not all the program required for AmigaDOS can fit in memory at one time, most of the commands must be LOADED from disk before they can be ex-

ecuted. Even when you're in the Workbench, a program must be LOADED to perform some functions.

For this reason you may be asked to re-insert the original WORKBENCH disk you booted with if it is not accessible at the time required. This can prove to be very confusing, and somewhat cumbersome for those used to having everything on tap in ROM.

There are ways to ensure you don't get stuck doing LOADs (punZ) of disk swapping. One is to buy an external drive, and keep your Workbench in DF0:. The other is to copy often used commands into RAM; and then tell AmigaDOS to find them there. These and other topics have been discussed in past issues of the *Amiga Review*.

## Books to help

If you're really stuck try grabbing yourself a copy of *The Amiga System*, published by Precision Books and written by Bill Donald. For CLI matters, consult *Master AmigaDOS* by Jeffery Stanton and Dan Pinal, published by Arrays. It is a simple to follow guide written for the complete novice. No computer expertise is assumed.

We will be running regular articles on the CLI and aspect of AmigaDOS in *Australian Commodore and Amiga Review* each month - so stay tuned, and you can be sure of a feast of good information.

## Monitors

Whilst the Amiga will operate on a colour television, the results are only just acceptable. For most owners, the purchase of a true RGB colour monitor is an essential step. One which can cope with at least 640 x 400 pixels.

Most C64 owners may already have a Commodore 1701 or 1702 monitor. These are fine for low-resolution, wide band, colour displays - which can also accept composite video. However, these monitors cannot handle RGB. They were really only ever intended to work with the C64's maximum resolution of 320 x

200 pixels (picture elements).

Amiga 1000 owners may connect the composite output of their machines to one of these monitors. A standard RCA cable will do the job - these are available from Dick Smith or Tandy Electronics stores.

The results are similar to what may be attained on a colour television. Good for 64 characters across the screen - but any more and you will have to choose your colours very carefully or buy glasses.

Amiga 500 and 200 owners don't have composite video output, however there is a monochrome video jack which can be used with the 1701/2. Once again, the results do not do the Amiga justice.

A few devices from the USA get around these cabling problems. One such gadget is C-View (\$49.95US). Connecting to the Amiga's standard video port, and then to the 1702 monitor, the end result is good enough to display a very legible 80 columns. The problem of course is getting one - a few dealers may have them. Why doesn't someone build one locally - a user group project perhaps?

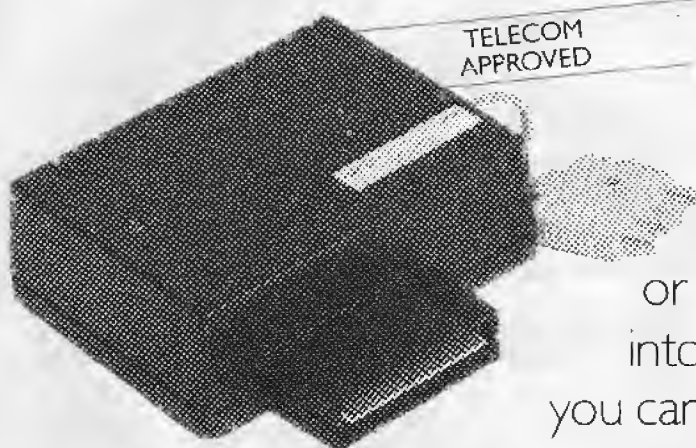
Even with a device like this, the physical limitation is that the monitors resolution will not support the full 640 dots output by the Amiga.

There are other devices floating around the USA which perform a similar function. Consult your local Amiga/C64 guru before deciding the best way to go - as these may start to filter through to Australian shores, customs permitting, around the end of the year.

1902A owners are more fortunate. The hardware they already have will cope with the Amiga's output very well. You can build your own cable - sorry, we haven't tried it yet - or buy a ready made job - once again, I've yet to see a local version.

Now, as for software, see our review on the C64 Emulator. ■

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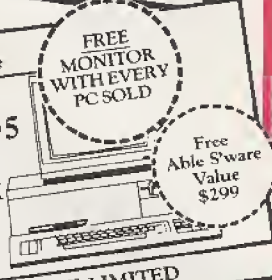
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# The 64 Emulator

by Andrew Baines

**W**HISPERS OF A hardware software combination emulating a Commodore 64 on an Amiga have been around for quite a while. My initial thoughts of such a device were positive. After all, it'll just be like plugging in a Sidecar and running a 64 as another window, right? No more mucking around connecting an Amiga to a 64 to use the Commodore Serial printer, I'll be able to plug the printer straight into the Amiga and use it just like another device.

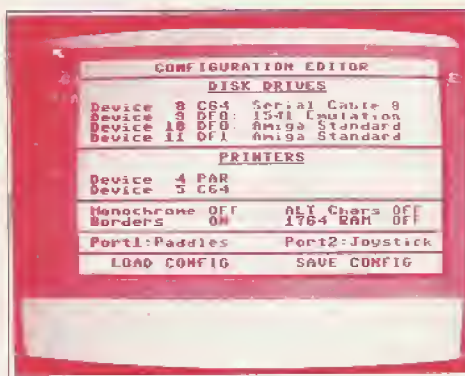
Not quite. It's very difficult to place *The 64 Emulator* in the box of most used software, though this is where it should be. The possibilities for emulation of a Commodore 64 on an Amiga are enormous. But ReadySoft have written the program so that it runs too slowly to be useful, and it won't allow any other program to run with it. It's not multi-tasking. Which means it's lost half its potential power before it starts.

*The 64 Emulator* comes as a single disk accompanied by a cord that connects to the Amiga's parallel port at one end, and a Commodore Serial device at the other end, such as a printer or a disk drive. Or you can daisychain a disk drive and printer.

The program disk is heavily copy protected. None of the copiers I tried could copy the *Emulator*. This isn't such a great problem, as ReadySoft give you the option of buying a backup for around \$A18 when you send in the registration card. ReadySoft are obviously considering upgrades.

The *Emulator* comes with a manual, which is only sixteen pages long, and, in some cases, is a little quick in describing the workings of the software.

The program boots up with a nice title screen, and then the familiar title



screen of a Commodore 64, but no window around it. The program has a configuration screen which can be accessed by pressing Control and Help together at all times (except while the disk is being accessed).

The most notable feature of the configuration screen is the option to use a 1541 disk emulator on the Amiga's drives. Or you can use any Amiga floppy drive or hard drive or a 1541/1571/1581 with any of the device numbers 8, 9, 10, 11.

In addition, device numbers 4 and 5 can be configured as a Commodore serial printer, the serial port of the Amiga, or the parallel port of the Amiga. The program keeps track of which device is plugged into the parallel port if you have a centronics printer.

You may also select a monochrome or colour screen. I suggest you stick to monochrome at all times, otherwise the programs run too slowly.

I tried to test a good cross-section of programs on the *Emulator*, but there are quite a few that won't load. Mostly this is due to the protection of the individual programs or their fast loaders, but sometimes they run too slowly to be called working.

An example is *Paperboy*. On the 64,

this runs with a smooth scroll that runs off the bottom left of the screen. On the Amiga using *The 64 Emulator*, the sprites don't show up properly. You can see the individual movements of the screen (one left, another left, eight down) so that the game is too slow to be called a game.

*GEOS* is one program with a fast boot that does run, although again, the graphics are terribly slow and you wait around ten seconds for the Desktop to draw the box for the icons. *EasyScript* does work, but cursor movement is slow and unbuffered. To get across the screen (40 columns) takes around 10 seconds.

The list of software I tested appears below, with any problems.

**Printshop** - Works, but updating the screen is slow.

**Newsroom** - won't load.

**Doodle** - won't load.

**Pirates** - works, and is only slightly slowed down.

**Trio** (word processor/spreadsheet/file manager) - works well, not slowed down too much.

**Winter Games** - won't load, and this is the case for all the 'Games' series.

**Supersprint II** - won't load.

**Leaderboard Golf** - loads, but too slow in drawing the course - around one minute per hit.

This is only a short list of programs, but *The 64 Emulator* is a non-event for most others with fast-loaders built in.

## Hardware

The serial connector is the only piece of hardware that comes with the *Emulator*, and is optional. Be sure to order the right one for your Amiga, 1000 models have a different parallel port to 500/2000 models. It plugs into any Commodore Serial devices you may have, disk drives

(Continued on page 42)

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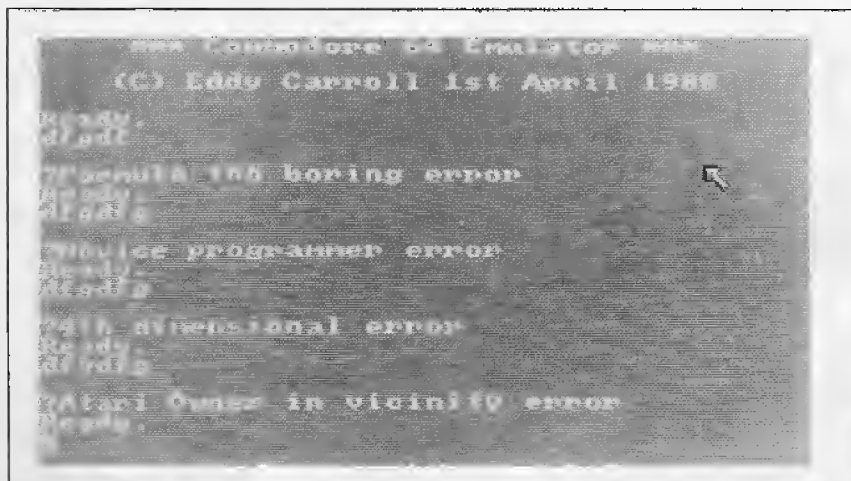
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Some people think the idea of a C64 emulator is a bit of a joke... a copy of this program appears on issue one of *Amiga-Live!*

or printers.

The only complaint I have is that to plug in a printer, you must first plug in a disk drive. The disk drive must be the first thing accessed on the port, making it impossible to attach just a printer, and use an Amiga disk to hold your programs. Disk access is slowed to VIC-20 speed, to let the program cope with converting the 64 instructions to Amiga instructions.

Also, the serial driver is an integral part of the program, and is not found in the Devs: directory, or the L: directory of the program disk. This means you can't use Commodore Serial devices outside of the program, which would be useful.

The main use for a program of this type would be to move all your text files to Amiga disks. To do that, you'd need to convert those files from PETSCII (PET Standard Code for Information Interchange) to ASCII (American Standard Code for Information Interchange).

Most terminal programs for the 64 do this automatically when speaking to computers that aren't 64s. But *The 64 Emulator* doesn't do this, so transferring files is impossible since it won't load any terminal program to do the job properly.

## Graphics and sound

Graphics are slow and cumbersome and seem to be the main reason for the speed of *The 64 Emulator*. Sprites on Commodore 64s are 24 bits wide, but the Amiga's sprites are only 16 bits wide, so

*Emulator* uses bobs, which are much slower, and tend to flicker badly. This is very noticeable in *Leaderboard Golf*.

Any program that splits the screen using raster interrupts should not be considered. It will run too slowly for all of the screen to be displayed. ESCOS, on Disk Magazine No 8 doesn't work at all: the top row of sprites flicker, and the other rows don't come on at all. *GEOS* is another program that the *Emulator* "works with", but it is too slow because it is heavily graphics based. *Printshop*, which is slow on regular 64s, is terrible. I don't recommend you use *Printshop* or *GEOS* with this program.

If you've ever listened to a tape that has a program recorded on it, you'll have a fair idea what the music that comes out of the Amiga's speakers is like. There is a legitimate reason for this, however.

The 64 usually runs music and sound as interrupts: ie, every 60th of a second, the computer stops and updates the music. *The 64 Emulator* is simply not fast enough to get around to stopping every 60th of a second: this is demonstrated by the speed of the cursor. So any sound that does come out comes out garbled, and often doesn't have any pitch, it comes out as one tone.

A lot of thought and considerable programming talent has gone into creating *The 64 Emulator* and getting it to work up to the high standard that is expected of software these days. It could not have been easy designing the software, just overcoming the hardware dif-

ferences of the two machines is a major feat in itself. And the program is very flexible, made possible through the configuration window which also allows the 1764 RAM expansion cartridge to be emulated by 256K of the Amiga's memory (only for 1 megabyte Amigas).

But I would have liked to have seen multitasking as at least an option. ReadySoft blame port clashes with other programs for making *The 64 Emulator* non multi-tasking. And the Commodore Serial port should be a device, so that it may be copied to other disks, such as word processors, to make use of Commodore Serial printers. The speed of graphics could also be improved if *The Emulator* used a 320x200 screen, instead of a 640x200 screen, then the program wouldn't have to draw two pixels for every one the 64 program draws.

Maybe a bit more hardware should be considered. A board with a 6510 chip running the instructions, and an interrupt program that tells it how to communicate with the Amiga's 68000 chip and through it Agnus, Paula, Denise and Gary. And maybe a 6522 chip to emulate a Commodore Serial Port, and a Commodore User Port, to free up the Amiga's ports.

This would add considerably to the cost of the unit, but the improvements in speed would make *The 64 Emulator* a productive tool, and place it in the basket of most used software.

Overall, *The 64 Emulator* is a good idea that seems to have gone wrong for a number of reasons. If you have a large number of text files to transfer, the program may be an option, but I would consider connecting the Amiga to the 64 through the RS-232 port as an easier method of solving the text-file problem.

*The 64 Emulator* is published by ReadySoft, distributed by Ozisoft (02) 211 1266 for \$149. ■



# Connecting your Amiga

*Andrew Baines investigates connecting a Commodore serial printer to the Amiga*

**B**UYING A NEW computer is a very expensive exercise, and money for a printer, in my case, was not available. The next thing I tried was to connect my MPS-802 to my Amiga, but no amount of nursing would make the printer even splutter. So, another method was needed.

The '64 talks to the 802. And my '64 can talk to the Amiga. So, all we need to do, is to connect the Amiga to the '64. Standard fresh out of the box '64s don't come with RS-232 ports. But the Kernal is capable of driving an RS-232 port. All we need is to make an adapter up to give the '64 a true RS-232 port.

The first step is to buy a kit from Jaycar Electronics. This is the adapter we need to make the '64 talk to the outside world. It costs around \$25 for the lot, including postage. This is a nominal amount considering the amount of 'doc' files you find on public domain disks these days. Try looking at the doc file for a terminal program while running the terminal program - there just isn't enough memory (in a 512k machine), and the terminal program isn't too happy about sharing anyway. The kit number is Cat. KE-4722 and Cat. PA-0888. The first is the kit; and the second is an edge connector to suit the user port on the '64. Jaycar can be contacted on 008 022 888, or for Sydney folk, 747 1888. After mailing or phoning your order in, Jaycar take only a few days to have your order at your mail box.

Assembly is reasonably easy; wire the kit up in 'host' mode. This is the mode the board is wired up as, so follow the diagrams and ignore anything said about terminal mode.

The next item we need is a cord to connect the Amiga to the '64. My cord is unique, in that it connects my Amiga to

my '64, and my Amiga to my modem. These two are different connections, so a switch is required. If you don't have a modem, don't buy the switch. The cord will cost around \$10-\$20, depending on what you buy, and where you buy it. All parts are available from Jaycar, and the parts for the cord are available from Dick Smith (008) 226610 or Sydney 888 2105. The full parts list is below:

ETI 1601 RS-232 Interface for Commodore 64 - Jaycar Cat. KE-4722 - \$16.95

Edge Connector to suit C-64 - Jaycar Cat. PA-0888 - \$6.95

D - type male - Jaycar Cat. PP-0840 - \$1.95

D - type female - Jaycar Cat. PS-0844 - \$1.95

D - type backshells - Jaycar Cat.

PM-0848 - @ \$2 each = \$4.00

Rainbow Cable - Jaycar Cat. WH-4516 - @ \$2.50/m = \$5.00

Miniature DPDT switch (optional) - Jaycar Cat. ST-0552 - \$2.10

All prices mentioned above are subject to change, but at around \$40, making your Commodore serial printer work on your Amiga is worth it. You will also need two 9-volt batteries to run the interface.

Please follow the instructions on assembling the kit very carefully, and don't connect the interface to the C64 before checking the wiring is correct. Turn your '64 off, and plug in the interface (it plugs into the user port, on the left hand side of the computer when looking from the front). Now it's time to make the cord.

There are nine pins we need to connect between the male and female D type connectors. The pins we need to connect

to the female socket are to the left. Connect each of these to the pin indicated in the second column on the male plug. These are:

**Female.** Connect these to the **Male.**

1. Protective ground	1. Protective ground
2. Transmit data	3. Received data
3. Received data	2. Transmit data
4. Request to Send	4. Request to Send
5. Clear to Send	5. Clear to Send
6. Data Set Ready	6. Data Set Ready
7. Signal Ground	7. Signal Ground
8. Received line	8. Received line
Signal Detector	Signal Detector
20. Data Terminal Ready	20. Data Terminal Ready

For most, connecting these is no problem. But before you begin, a bit about the switch. When your computer is talking to your modem, the wiring needed is straight one pin to the other, with no variation. But when two computers need to talk to each other, you need to swap the Transmit (2) and Receive (3) at one end of the cord. This is because when your Amiga wants to transmit to your C64, it sends information down the transmit line. To receive the information, the C64 needs it to come in on the receive line. So AT ONE END OF THE CORD ONLY, swap the wires for pins 2 and 3 as shown in the wiring detail above.

My cord is slightly different to that, in that it includes a switch so I may use the cord with my modem as well as my C64. The wiring for the switch is: connect pins two and three to the central pins on the switch, one each side. Now connect the pins on one end of the switch to the pins on the other end of the switch, and swap them over. The last connection is to connect the wires repre-

sending pins two and three to one end of the switch. Make sure there are no connections in between the lugs of the switch. Plug it in and try it. If it doesn't work, flick the switch. Now one position of the switch is for use transferring data from your Amiga to your '64, and the other is to connect your Amiga to your modem.

term:

```
CLS
WINDOW 2,"Amiga to C64 Transfer",
(10,60)-(600,170),15 PRINT"Amiga to
Commodore 64 File Transfer - 1200
Baud PRINT "LOAD Third-term on the
C64,
PRINT"and load the parameters
(parameters)
PRINT "Go to Terminal mode, press
[Commodore+b]
PRINT "Now choose the file you wish
to transfer:
INPUT"What is the diskname :","d$
IF d$ = "" THEN term
INPUT"What is the directory or Drawer
:","dr$
IF dr$ = "" THEN term
INPUT"What is the filename :","f$
IF f$ = "" THEN term
a$=d$+":"+dr$+ "/" +f$ :PRINT a$
INPUT "Correct [y/n]","c$
c$=UCASE$(c$):IF c$ = "Y" THEN
transfer
GOTO term
transfer:
PRINT "Transferring File...Please Wait"
OPEN"COM1:1200,n,8,1" AS 1
OPEN a$ FOR INPUT AS #2
WHILE NOT EOF(2)
LINE INPUT #2,da$
co%=co%+LEN(da$)+1
IF co%<18000 THEN
PRINT #1,da$
ELSE
INPUT "Please SAVE buffer or PRINT
buffer on C64","z$ co%=0
END IF
WEND
CLOSE# 2:CLOSE#1
```

PRINT "Transfer Complete...Press  
[Commodore+Shift] on C64 PRINT  
"Then save buffer to disk.

Type the above program in to your Amiga and run it. Use either Amiga-BASIC or a basic compiler. It asks for a filename in the form disk, directory, filename. If your file is in the root directory, you may like to edit the program so you just enter a pathname in one hit.

On the '64 side, use a terminal program. The one I use is called *Thirdterm* by Tom Hughes, and is available on one of the latest *Australian Commodore Review* Disk Magazines for the Commodore 64. Ring (02) 817 0011 to order; just ask for the disk with *Thirdterm* on it.

*Thirdterm* operates on a buffer basis, but this is selectable. To set up *Thirdterm* properly, load it and run it. The

**“At around \$40,  
making your  
Commodore  
serial printer work  
with your Amiga is  
worth it”**

main menu will come up. Use the cursor keys to move the bar up and down, and make your selection using return. Select Protocols. A new menu will come up. Select set parameters and the menu we want will appear. Select Baud, and it will change to 1200. Now select Main Menu, right down the bottom. Select Terminal, and you're almost ready to go. Using terminal mode is different from the rest of the program - there aren't any menus. The only thing to remember is Commodore + Shift together return you to the main menu to save the buffer, and to turn the buffer on, press Commodore and B together. Now you may run the program on the Amiga.

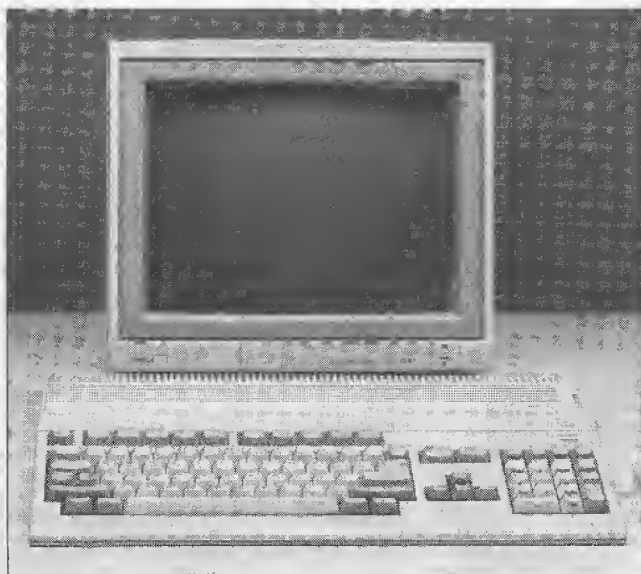
If the file you are transferring is greater than 18000 bytes, Amiga to 64 transfer will stop every 18000 bytes and ask you to save or print on the '64. When this comes up, press Commodore and Shift together, and then select save buffer; or print, buffer, to printer, no LF. When you have finished saving or printing or both, press run/stop and restore together, select protocols, set parameters, Baud, and main menu. Then select terminal, press Commodore and B together, and press return on your Amiga. This all sounds very complicated, but it's actually very easy, and allows you to edit the files you download on *EasyScript* if you wish.

Another way to download files is to use a wordprocessor or whatever, anything that uses the preferences you can set. Before loading your program (I'm using *KindWords* at the moment, which is a bit memory-hungry), set your printer preferences to generic, draft, set up your paper as desired, and set the output to serial. Now go to the serial specifications and set the baud rate to 1200, the parity to none, the stop bits to one, the data bits to eight, and the protocol to none. Save this, and load your program. Please note that this does not allow you to print graphics, only text files. Now select print on your program, and the files will be downloaded to the '64. The advantage is that the margin settings, centring and anything else I choose on my wordprocessor come out when I eventually print the document.

Unfortunately, there isn't a short cut for the '64 - Commodore's PETSCII gets in the way (PETSCII is the Commodore 64 version of ASCII. Since the Amiga uses ASCII and the '64 PETSCII, a conversion must be done). So a terminal program is the safest way out.

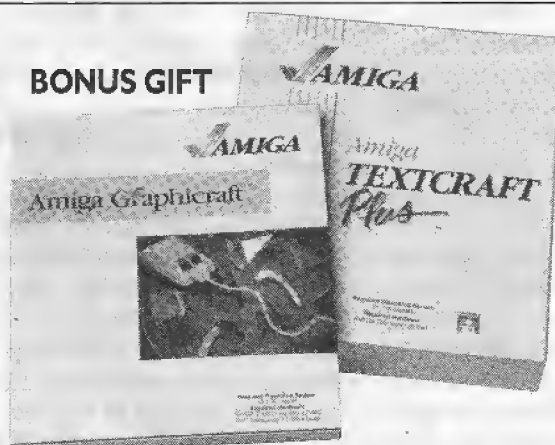
All of this is extremely tedious, but it gets the job done until money for a new printer is forthcoming. Maybe I should have bought a centronics printer in the first place? ■

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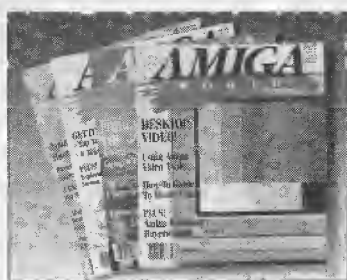


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# The Halley Project

## Amiga vs C64

by Tony Smith

**W**HEN A GOOD PAL of mine lent me his Amiga 500, I was in two minds about the whole idea. I decided to make the most of it and find out as much as I could about the machine. After a couple of days I found it a fairly easy machine to use and the obvious successor to my faithful C64.

Along with a collection of disks there was one which took me away from the Amiga and off into space for a couple of days. That disk contained *The Halley Project*.

### C64 version

As a confirmed fan of real-time simulations and an amateur astronomer, *The Halley Project* on the C64 captured my imagination and resulted in my completion of the entire mission.

The control method is outstanding, giving you the capabilities of flying past any of the planets or moons of our solar system, and as you fly past you can turn your view around and watch your target recede into the distance behind you. Landing consists of taking your craft to within 100,000 km of your intended target and setting yourself an orbit within that distance until you are signalled that you are over a landing area (pressing A will take you down).

One problem which I encountered was to fly to Charon. None of my astronomy books mentioned it so I racked my brain and decided to try flying out to Pluto, which I suspected had something to do with Charon. Fortunately my hunch was correct and Charon was found orbiting Pluto and almost as large.

Upon landing on any of the worlds you are shown a picture of the surface. Earth gives you a view of fields and cattle, Titan shows you Saturn, and Pluto shows an icescape which sends shivers



down your spine. Mercury, a very hot planet, displays an arid desertscape, and of course our own moon shows a view of earth which almost makes you homesick.

### Amiga version

Then along came the Amiga version. Almost as soon as the disk is inserted into the machine, you are greeted by some incredible digitised sound track. Next comes a sample of Amiga graphics, stars whizzing by and the credits coming in from the distance and standing behind each other in a great 3d effect.

Finally the familiar cockpit scene is revealed, but it's not the same! The detail is much more involved, still the same view but the instruments and controls are much clearer. The whole shebang is controlled with the mouse, which lends itself nicely to the methods employed in controlling this spacecraft. It's an easy matter to just point at what you want and click for instant action.

The control method (apart from the mouse) is identical to the 64 game with the same sky scene and speed controls. The map, radar and viewplate scenes are also very similar to the 64 version. The big difference comes when you actually land on your target. The fly-in and feel of the ship retains all the playability and feel of the 64 version, but upon landing the scenes which then display, although static, show the capabilities of the Ami-

ga as stunning.

I landed on Io (a moon of Jupiter) and was greeted by a shot of the planet which looked as though it was straight out of the Voyager photographs. A trip to Uranus even showed the recently discovered vertical rings, Earth landing was rewarded with a scene instantly recognisable as the view of Los Angeles from the Hollywood Hills at night, familiar from so many of the movies.

This was where the Amiga version really excelled over the 64 version. The game loses nothing in the conversion, it only serves to enhance an already brilliant simulation with improved graphics and sound.

This brings me to the only point of criticism of this fine game, the sound - on the 64 version there is an annoying sound above 250,000 km/sec which warns of an imminent jump to hyperspace; the sound on the Amiga is identical and equally annoying. I think that this is the only part that could have been improved.

When all the missions have been concluded and satisfactory times have been scored, it is time for the Final Mission. The mission itself is secret, the information is contained on a 'telegram' sent by the company. Here in the Antipodes, we don't have the easy access to the toll-free numbers to ring and order these updates and offers, so I'm going to give away some of the secrets.

For the final mission, you must select the Starbird mission from the start-up menu. Instead of following the normal instruction for the first stage of the mission, you must fly to Earth, then land. Usually if you land on the wrong planet or moon, you lose points, but this time when you land you can enter the word *Mindscape* on the keyboard - the border should flash as you type. The

next part of the final mission will be displayed, good luck and I hope you don't have too much trouble finding that tiny moon.

## Conclusion

In conclusion, *The Halley Project* is a brilliant conversion from the 64 to the Amiga, with nothing being lost in the conversion, the enhanced graphics and cockpit make it more enjoyable for the experienced sky pilot. A difficult game for the beginner, perseverance holds its own rewards. It is very satisfying to confidently approach a landing knowing that you have made good time and you are able to land safely, the music which plays when you are in range of base relaxes you completely and washes away the tension of the flight. The sound and loading screen on the Amiga version also does a lot to add to the enhancements of the game.

Keep it up, Mindscape, we need more software of this calibre. ■

# More antibiotic news

by Tim Strachan

Unfortunately, there are still some of the living dead out there coming up with unpleasant little viruses. There is no evidence yet of anything more than "boot-block" viruses, such as the SCA and Byte Bandit viruses, which reside in the first two blocks of a bootable disk and load themselves into memory ready to leap onto the boot blocks of other disks booted in that session.

If odd things are happening to your computer, screen blanks, strange messages, etc, then you may have a virus on your disks, and you should be aware of the problem and have an antidote.

There are various available on Bulletin Boards and the Fish Disks, and one of the best is *Vaccine* written by Mike Hansell and Martin Boyd in Sydney, which can be found on Megadisc 6 or 7.

## Guardian

A recent commercial anti-virus program has come via *Transactor* magazine in the US which goes a bit further, but it is a commercial program rather than public domain, and you'll have to write away for it. I'll quote from the author:

"*Guardian* does not steal even a single cycle of the machine's time, because it's called only during boot.

"While the other antivirus programs are tuned to a particular version or family of viruses, *Guardian* recognizes any non-standard bootblock. By 'standard bootblock' I mean a bootblock created by the Workbench INSTALL command. This standard

bootblock is contained in the *Guardian* code.

"*Guardian* installs itself in place of the bootstrap module, and examines the contents of each bootblock by comparing it with the standard one, BEFORE it is actually executed.

"If you want this program, send 3 pounds (6 USD) to the author or to Transactor (UK) Ltd. You'll get a disk with the last *Guardian* version and a serial number to use for the next upgrade and for general support about any problem you may have with *Guardian*."

Transactor (UK) Ltd, Unit 2, Langdale Grove, Bingham, Nottinghamshire, England, NG13 8SR.

## Viewboot

Incidentally, there is talk of another virus which can be detected by the string "DASA" in the boot blocks. A worthy program for viewing the actual contents of the boot blocks of any disks is called VIEWBOOT and provides an easy interface for checking out suspect boot blocks.

## Tri-Star

(Ed: Another, even better program is the TRI-Star Virus detector which has a very quick and easy ASCII viewing option of boot blocks. It will detect three different viruses, or any non-standard boot-block. You can find it, and other programs like it, on our own Anti-Virus-Pak, available by calling (02) 817-0011. A new version will be released by the time you read this that should kill the DASA Virus.)

## Amiga Display

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# All about Startup-Sequences

by Tim Strachan

## The basics

The Startup-Sequence (SUS from now on) is simply a series of CLI commands strung together in a batch, and read by the machine at startup - hence the names "Batch File" or "Command Sequence File" for any such group of CLI commands designed to achieve a purpose. The SUS, along with any other batch files, lives in the S (for Script) directory of your bootable disk, simply because it's convenient to have a place for them, and so the system is set up to look for them there whenever the EXECUTE command is issued - usually by you, but in the case of the SUS, by the system on bootup.

There is nothing inviolate about a SUS, they are there for your convenience, and you are encouraged to change them around, customise them as you wish, and since they're just a series of words (ASCII characters, such as letters and numbers), you can use any Text Editor or Word Processor to load them in and edit them. In the case of a word processor, just make sure that it has a SAVE option which allows you a "Text Only" or "ASCII" option.

Otherwise you may find that you've saved a file which has some "embedded" characters peculiar to the word processor, and therefore liable to confuse your computer on bootup, leading to the gnashing of teeth, wrinkle-forming frowns and eventual loss of self-esteem.

There are various schools of thought about the style of SUSs - purists and power users like to keep them as short as possible, to speed up the booting process, and minimise the grinding of the internal drive, df0:. Other users are more baroque, and lean towards long elaborate files which run all manner of clocks, monitors, shells and so forth in the back-

ground, some of which may end up fighting with each other in the depths of the machine when it comes to sharing resources, like memory.

There is no doubt that the fewer the background processes ticking away, the more stable the use of the computer, but there are numerous little utilities which are recommended, such as MACKIE (blanks your screen to a moving pattern, and pops up a CLI with a key-press/Amiga-Live! Issue One), CONMAN (significantly improves use of the CLI), FACCII (speeds up floppy disk access by maintaining buffers as big as you care to make them), and so on.

## A standard sus

If you open a CLI, and enter > type sys:s/startup-sequence you'll see on screen the SUS of your current system (sys:) disk, and if you are using a standard issue Workbench, it should look something like this:

```
echo "Workbench disk. Release 1.2
version 33.46"
```

```
echo "Use Preferences tool to set
date"
```

```
if EXISTS sys:system
path sys:system add
endif
if EXISTS sys:utilities
path sys:utilities add
endif
BindDrivers
LoadWb
endcli > nil:
```

There are a few unnecessary lines here - you know already that this is a Workbench 1.2 and that you can use Preferences to set the date. So we can eliminate the first two lines, and thus save two disk accesses when the boot

disk's C directory is searched for the "echo" command, which simply allows you to put anything on the screen during a batch file (how to eliminate these comes later on). Then there are two IF-ENDIF statements, designed to establish the existence of the directories UTILITIES and SYSTEM on your boot disk, and having done so, to add those two directories to the path which is searched for any command you may type into the CLI.

Now if you always keep those two directories (drawers) on your Workbench, then we can eliminate both statements, and replace them with a single line, namely:

```
path sys:system sys:utilities add
```

The command PATH will allow you to make up to 10 additional search paths on the one line, so you could expand on this a little and include, say, ram: or ram:c (if you're going to put any commands there) and maybe sys: if you keep any useful utilities in the main window of your boot disk. The usefulness of PATH command becomes apparent when you realise that you no longer have to refer to, say, the command DISKCOPY as SYS:SYSTEM/DISKCOPY any more - you can simply enter DISKCOPY on its own and it will be found because you've told the system to peek into the SYSTEM drawer as well. Likewise with NOTEPAD or SETMAP or a number of other utilities found in different places on your disk.

The next command BINDDRIVERS is there just in case - all it does is make sure that any piece of hardware (hard disk, etc) which has an associated icon in the SYS:EXPANSION drawer will be included in the rest of the session. Not



really necessary otherwise.

LOADWB is a program which runs what we know as Workbench, ie the WIMP (Windows, Icons, Mouse, Pull-down menus) interface, originally developed as a concept by Xerox, and since then greedily appropriated by Apple Computers, as if they owned it! You could even remove this, as many CLI users do, and forget about icons altogether. However, for easy (and powerful) interfacing with the Amiga, you can't beat it, and it is the way most normal users tell the computer what to do most of the time.

Finally, we arrive at the last line, which simply tells the system to shut down this CLI window in which the SUS has been executed. If you want to keep the CLI around, and simply resize it (dragging the bottom right corner up with the left-mouse-button (LMB) pressed) to access Workbench, you could knock this line out too.

So what has our SUS been reduced to? Simply :-

```
path sys:system sys:utilities add
binddrivers
loadwb
endcli >nil:
```

or even:-

```
loadwb
endcli >nil:
```

Now you can expand it again and speed it up using a TEXT EDITOR, called ED, which is sitting in the C directory of your Workbench disk. All the better, however, if you have an ASCII-saving Word Processor, or a good Text Editor such as TxED, or CygnusED, or Zirkonics PTE or the shareware editor UEDIT. For more information about such topics, find the current version of Megadisc which attempts to explain practical use of the Amiga. ■

## AmigaDOS error messages

THERE ARE TWO types of errors recognized by AmigaDOS: the user error and the programmer error. A user error generally involves some problem made by the user, such as supplying the proper directory name. Programmer error is a problem which must be corrected by the programmer. The latter usually indicates "bugs" in the program code.

In the explanations below the first line states the error as indicated by AmigaDOS, and the following lines give a fuller explanation. If you find that an error has occurred, and are not sure why, you can always enter either WHY or FAULT, to get the brief explanation.

### User error message explanations

#### 103 Insufficient free store

There was not enough available RAM in your Amiga. Possible solutions are to remove other active programs or get more RAM.

#### 104 task table full

You cannot operate more than 20 concurrent tasks at a time.

#### 120 argument line invalid or too long

You passed the wrong arguments to the command or program.

#### 121 file is not an object module

DOS expected the command you entered to be executable code. The file given was not in valid "object module" format.

#### 122 Invalid resident library during load

A large part of the Amiga's code is contained in "resident libraries". This error occurs if the library expected by DOS was invalid or unavailable.

#### 202 object in use

A file or directory specified by the command is currently being used by another application or command in an unsharable manner. You should wait until the other command is finished.

#### 203 object already exists

A file or directory name you specified already exists. To re-use the name, delete that file or directory first.

#### 204 directory not found

DOS was unable to find a DIRECTORY with the name you gave.

#### 205 object not found

DOS was unable to find the DEVICE or FILE with the name you specified.

#### 206 Invalid window

The window specification you gave was incorrect.

#### 210 Invalid stream component name

A filename was specified incorrectly, using either an invalid character in the name, or a name more than 30 characters long.

#### 212 object not of required type

The file specified was not usable by the command or program. A typical example would be trying to do a DIR of a filename!

#### 213 disk not validated

This can occur if validation by DOS was not completed on the disk when you requested access to it; or DOS was not able to validate the disk at all (due to a disk error). You can use the DISKDOCTOR command to patch the disk, then you COPY all the files to a blank formatted disk.

#### 214 disk write-protected

The disk write-protect hole (upper right corner) was open, i.e. protected. Close the hole to write to the disk.

#### 215 rename across devices attempted

You can use RENAME to move files around on a particular device, but not between devices. Use COPY and DELETE to move a file to another device.

#### 216 directory not empty

You can only delete a directory if there are no files in it.

#### 218 device not mounted

A mounted disk is a disk inserted in a drive and completely validated by DOS. Use INFO to see which disks are mounted.

#### 220 comment too big

Up to 80 characters may be used in a comment.

#### 221 disk full

There isn't enough room left on the specified disk.

#### 222 file is protected from deletion

The delete flag is cleared. See PROTECT and LIST.

#### 223 file is protected from writing

The write flag is cleared. See PROTECT & LIST.

#### 224 file is protected from reading

The read flag is cleared. See PROTECT & LIST.

#### 225 not a DOS disk

The diskette in the drive is not an AmigaDOS formatted disk. It may be blank or a Kickstart disk.

#### 226 no disk in drive

No diskette was detected in the drive specified. ■

## Superbase part 7

## Superbase - a relational database manager

SEVERAL LETTERS HAVE been received from readers with corrupted files, 'Data mismatch' messages, etc. The last article published was somehow waylaid by gremlins and got out of sequence. It should have appeared before the previous two. Anyway, better late . . . etc, etc. I hope it has helped those I couldn't respond to in person, and I'm sure it will be of help to others.

Some of you haven't recognised this error message for what it really is, believing it to indicate duplicate records . . . if it were only that simple!

This month we tackle a very powerful aspect of *SuperBase*, but one skimmed over in the manual, namely linking files together.

### What are linked files?

Two or more databases are often used together. For example, suppose we have a file of students and another of teachers. We can find out Freddie Jones' teacher by cross-referencing the two files on Freddie's room number, which is a field we make common to both files. When this is done, we are relating the information in one file to that in another. This is an often used and simple concept. A database management system (DBMS) that allows us to relate data from separate database files is called a "relational" system. *SuperBase* is a relational database management system in the same manner as *dBASE*.

Actually, neither *dBASE* nor *SuperBase* are true database management systems in the strict meaning of the phrase; they are really file management systems with relational features added. However, both contain their own programming languages, permitting a user to develop extremely powerful and complex programs, such as:

- General Ledger, accounts receivable, accounts payable.

- Record and cassette collection management, home budget analysis.

- Mailing list management, real estate management.

Unfortunately, both programs have limitations, the most important of which is the restriction of only being able to link two files at a time (*dBASE* II). Information from three or more files can be linked, but this requires careful programming and slows processing considerably.

### Why use linking?

Taking the general ledger application, we find that in its simplest form it is composed of accounts receivable, accounts payable and a mailing list. Now, instead of setting up three files with overlapping information, you could set up one name/address file, which is accessed (referenced) by all three applications. Thus, only this one file need be defined, stored and updated for all names and addresses, saving both time and storage . . . a real bargain!

Because these files can be referenced (linked), considerable thought and care should be put into designing them and setting up the link relations.

Compared with single-file databases, linked files offer the following advantage:

- More efficient utilisation of disk space.

- Equal data support using a smaller number of records.

- Improved efficiency in changing data pertaining to groups of records having the data in common.

In *SuperBase*, four statements control the different aspects of linking:

**SETLINK**—This specifies the ac-

tual link between the main file and any other specified file,

eg. 10 file "file1":setlink "file2".

**LINK**—After selecting the link key (either as a field or a variable), this command does the actual link to the second file and tries to find a record in it. If a key is not specified *SuperBase* will default to the index key of the current record.

**J**—This command returns to the current record in the first file after processing is finished.

**ELINK**—This command simply cancels the link. It is a good idea to put this statement at the beginning of your program so as to cancel any links that may still be set. Using this, you know that you are starting in the correct file.

You will need to become familiar with these definitions. A clear outline of how to link files is set out in the manual on Page P-9 (Section 1.5) in the C128 version, or P-25 and P-26 in the C64 version.

Before we get too technical, let's put these commands in order and then illustrate with a couple of examples. I initially had trouble remembering which file was which, and often was confronted by the cryptic message "already linked" or a similar error message. But, once you get the hang of linking, a whole new vista opens to you and you are no longer restricted to 127 fields or duplicating data in several files.

1. disable any existing links with "elink"

2. select File A

3. specify the link to File B

4. process File A

5. use a field in File A as the index key field in File B (link). This record is now the current record.

**NB:** Step 5 is very important so spend time on the design of your files.

6. process File B. Remember File B can be updated with data from File A, if it is first stored in variables before creating the link.

7. end the link (rlink) which returns you to the current record in File A.

8. continue to process File A if necessary.

9. if you want to, you can make File B the current file by using "elink".

#### Example 1. :

```
10 elink
20 file "invoices":setlink"customers"
30 ask "invoice number";k$:select k$
40 link [cust,ref]
50 display [code][name][address][telephone]:wait
60 rlink
70 goto30
```

The next example is a little more practical for most of us. It links data from two files containing information of a record collection. This could be adapted for cassettes, videos, magazine articles, etc. :

#### Example 2. :

```
10 elink
20 file "albums":setlink "band"
30 ask "artist's name":at$
40 find "at.list" where [artist] is at$
50 select from "at.list":eol 1000
60 d=[date]:t$=[track]
70 link [label.no]
80 pmat 800
90 nmat 800
100 display [album.no][label.no]at$d$t$[band][location] 110
rlink
120 goto 50
800 rlink: goto50
1000 display @20"End of search":wait:menu
```

I'll explain this program in more detail, as I've had several enquiries for this type of application:

File A (albums) contains the following fields:  
[album/no] (key), [label.no], [date] and [track].

File B (band) contains the following fields:  
[label.no] (key), [band] and [location].

In line 60, the information in File A that we wish to display later is set into variables, so as to remain in memory when we link. In lines 80 and 90, we use "pmat" and "nmat" in case the [label.no] is not found. These commands are covered in the manual and should be used with both "select" and "link".

That's it for this issue. I hope I've managed to shed some light on the possibilities that can be had for little direct input by linking application files. ■

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# The Works!

by Eric Holroyd

**S**OME OF THE business software I've seen for the Amiga has more features than the average home or small business user would ever need.

I believe that most ordinary users of word processors for example, only ever use a fraction of the features offered in some of the very high-powered software now available. It's the same with database and spreadsheet programs, some of them are so powerful and enriched with wonderfully complicated features that you need to go on a course to learn how to use them.

For those amongst us who don't need all of that super-power, here's a very user-friendly package that teaches as you go from sample programs for each section allied to tutorials in the three excellent manuals which come with the single disk containing *The Works!* which is a suite of programs designed to work together or completely independently, depending on your needs.

## Word processor

There's a more than adequate word processor: *Scribble!* which will do all that most ordinary folks would ever want to do, and then some. All the standard word processing features are there to let you manipulate your text and it's quite easy to get into and start working with.

For instance, selecting "Boldface" from the Style menu turns the cursor into a little "paint-roller" icon which you run over text to be Boldfaced. Same for Underlining (or even combine the two and add Italics as well). Cut and Paste with pull down menus or keyboard shortcuts, the choice is yours. When you've got your document the way you want it, check your spelling with the built-in user-expandable 40,000 word dictionary.

## Database

The database section is *Organize!* and it's a pretty powerful program at doing just that. It has a host of search and sort functions with a number of different "Filtering" levels to pull out exactly the data you want. Once you've got your data ready to output you can design your printout (called a Report) to suit.

Home uses for a database program include: address and phone number list, recipe file, stamp/record collections, list of books or software etc. etc. and *Organize!* is very good at letting you collate such information easily and quickly.

Owners of small businesses would no doubt find it useful for those kind of things too, as well as keeping inventory of stock and doing invoices, accounts etc. There are calculation and formula functions to do all this with, including one called "Accumulator" which is used to keep a running total when searching or printing reports. As with all sections of the suite there are sample databases to work with and tutorials to help you learn.

## Spreadsheet

*Analyze!* is the spreadsheet part of "The Works!" and again is a very useful tool for home and business alike. To understand what a spreadsheet is used for just make four (weekly) columns on a piece of paper and write down two or three figures for each column to represent what you spent on (say) petrol for each week. Now add up each column and write the total at the foot of each. To get a final total for the month, add up the totals of the four columns.

Let's say that you now discover a petrol docket that you'd forgotten about from the second week and you now need

to add it in to correct your total monthly petrol bill. First of all you add the extra figure to column 2, re-total column 2, then re-total all four columns to get the corrected monthly figure. Laborious, isn't it? This is where spreadsheet excels. If you'd been using *Analyze!* instead of pencil and paper you'd just have entered the extra figure into a "cell" in column 2 and pressed the "total" key and it would have all been done for you!

Imagine doing all your yearly income tax sums as easily as that and you'll begin to understand the value of *Analyze!* There's a great deal more to using a spreadsheet, but that's the very basis of it.

Space doesn't permit me to go any deeper into *The Works* except to say that you can do "mix 'n match" things with it like:

- Use *Scribble!* to do a Mail Merge from *Organize!* where you send out a personalized letter to a number of people.
- Copy data from an *Analyze!* worksheet into a *Scribble!* document.
- Insert text from a *Scribble!* document into an *Analyze!* worksheet.

There's much more in this versatile suite and the more you use it the more you'll like it.

Distributed by Ozisoft (02) 211 1266, RRP \$359. ■

Developed by:

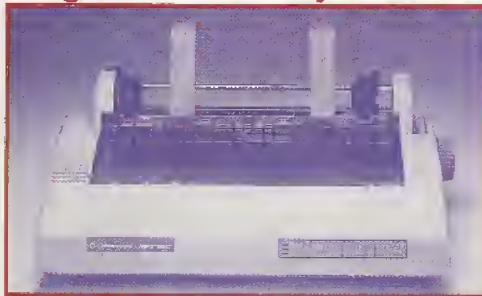


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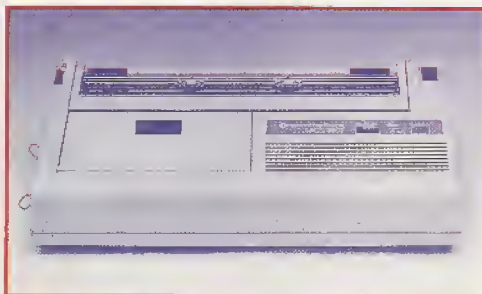
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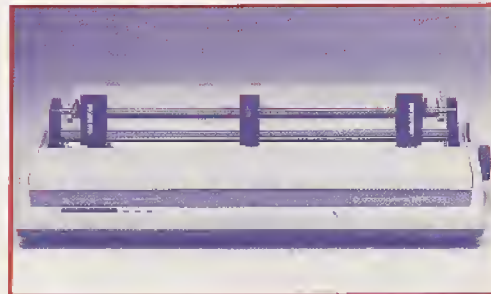
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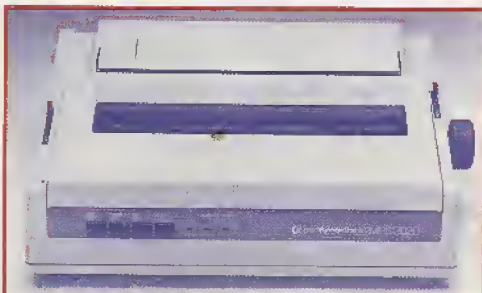
*Commodore DPS 1101 Daisy Wheel*



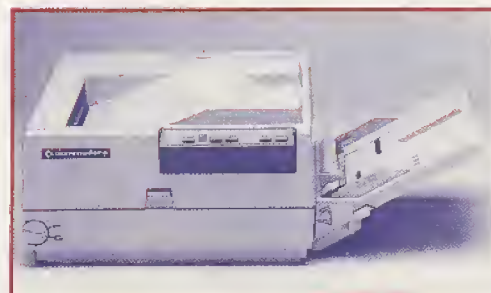
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*Commodore LP 806 Laser Printer*

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This document was produced on the Commodore LP806 printer.



# Businessware

accounting software

by Peter Yates

**U**NTIL NOW, there has been a decided lack of good accounting software for the Amiga. What has been developed in this area has been rather inflexible and suitable only in the country it was developed in. Enter Buusinessware, a new business package developed by Meridian Systems Ltd in New Zealand.

Meridian Systems have taken the modular approach to developing the system, which comprises five modules: Invoicing/Sales Analysis, Accounts Receivable, Inventory Control, Accounts Payable and General Ledger. The modules are available as either a stand alone program, a Business Package I comprising Accounts Receivable, Invoicing/Sales Analysis and Inventory Control, a Business Package II comprising Accounts Payable and General Ledger, or as the full Accounting System, which is all five modules.

## Invoicing/Sales Analysis

This module works hand in glove with the Accounts Receivable module and would not be recommended as a single purchase without the Accounts Receivable Module. This module enables you to:

1) **Maintain Customer Groupings.** This allows sales to be broken down over differing areas of a business for the Sales Analysis reports. It allows for 99 different Customer Groups, which is ample for most small to medium size businesses.

2) **Maintain Sales Groupings.** Similar to the Customer Groups only they deal with grouping Sales types. Once again 99 Sales Groups are catered for.

3) **Maintain Products.** Allows entry of data relating to products for use in Invoicing. The file size here is only limited

by how the data disks are set up (see setting up data disks).

4) **Maintain Tax Groups.** This enables setting up of Sales Tax rates and the like. Meridian have sensibly left the user to enter this data rather having it built into the system, which maintains good flexibility and the ability for the system to fit the sales tax structure of any country. Nine different tax scales are catered for.

5) **Enter and Print Invoices/Credit Notes.** As it suggests controls the entry and printing of invoices etc. There are a few additional touches here which most users will find very useful. A) The ability to print predefined text on an invoice at the press of a key, useful for entering messages on to invoices for the customer. B) There are seven different formats the invoices can take and it is hard to imagine a business which couldn't find a suitable format among this selection.

6) **Entry of Cash Receipts.** Enables cash or cheques to be entered to the customer's account at any stage.

7) **Updates of Customer/Sales Analysis.** This can be done at any stage of a period as well as at the Period End Update.

## Accounts Receivable

This module is received in conjunction with the Invoice/Sales Analysis module and similarly would be of little

use on its own. Its features are:-

1) **Main Account Master File.** Set up/maintain/delete Customer Accounts, and entry of all necessary Customer details.

2) **Maintain Statement Messages.** To enter text for messages to appear on Statements covering Promotional and/or Credit aspects.

3) **Load Account Transactions.** To ready all transactions created in the Invoicing/Sales Analysis Module and also affords the opportunity to manually enter any other transactions or journal entries pertinent to a customer.

4) **Print of Aged Accounts Report plus Customer Statements.** Flexibility is again the name of the game here, there being a number of different options for the Aged Accounts report plus the ability to select who the user wants to send statements to it desired or all if all customers are to receive statements.

5) **Ledger Control Enquiry.** Enables the user to view Balance and Transaction Totals information at any stage of the Accounting period.

6) **End of Period Update.** To update data within the module and post to other modules where applicable.

## Inventory Control

This module deals with the Inventory side of the business and features:-

1) **Maintenance of Inventory, Supplier and Tax Files.** Performed in much the same manner as maintenance described earlier.

2) **Inventory Transactions.** Al-

3. PRINT PRICE LISTS / REPRICE		OPTION : R = REPRICE
Report subheading :	REPRICE FURNITURE UP 10%	
Starting product code :	01	SEQUENCE FIELDS :
Ending product code :	2-INSTAL	
Product code key :	*	
Group key :	F*	
Location key :	*	
Supplier key :	*	0 Product code
Sequence field :	0	1 Group
Field break character :	0 (0 = 6)	2 Location
		3 Supplier 1
		4 Last order supplier
		5 Tax group
		6 Last sale date
	Price 1 formula : P1*10%	
	Price 2 formula : P2*10%	
B = BOTH PRICES    O = PRICE ONE    T = PRICE TWO    R = REPRICE    Q = QUIT		
Accept Details Y/N Y		



lows entry of orders made on suppliers, orders received from suppliers, stock sales (sales not recorded using the Invoice module), Stock Adjustments.

**3) Print Price Lists and Re-price.** To print price lists plus the ability to reprice any selling prices. The re-price option allows total flexibility in that the user can specify either percentage change or new prices covering one, all or a range of products.

**4) Print Stock Taking Lists.** For that time of the year, a very handy option.

**5) Inventory Status Reports.** To print a report showing either Stock on Hand, Stock on Order, or Stock Lines needing reordering.

**6) End of Period Update.** To update the files and pass on data to other modules.

## Accounts Payable

This module deals with the suppliers and payment of accounts.

**1) Maintain Accounts File.** To enter supplier data and set up records.

**2) Maintain General Ledger Control Codes.** To enable automatic generation of General Ledger Transactions to pass on to the General Ledger module.

**3) Load Account Transactions.** To enter Supplier Invoices, Credit Notes, Journals and approve previously entered Invoices for payment.

**4) Print Reports.** Print Aged Account Report and Payment Status Report on all invoices in system, or all invoices meeting various criteria.

**5) Print Remittance Advices.** To accompany cheques to suppliers detailing invoices being paid etc. Once again there are numerous options ie print all, print for one supplier or a range of suppliers.

**6) Ledger Control Sheet Enquiry.** To provide the user with ledger control information for balances and transaction totals.

**7) End of Period Update.** A file update and to pass on data to other relevant modules.

## The General Ledger Module

A module to look after the General Ledger and unlike most other General Ledger packages goes one step further and provides budgeting facilities. It features:-

**1) Maintenance of Account Master, Budget and Report Files.** Following the same procedure as in all modules. The Report File being a file where the user can specify the type and style of reports he wants out of the system, again it would have to be a very fussy person not to find suitable styles and reports from the given range.

**2) Load Ledger Transactions.** Allows for entry of Ledger Transactions not generated with other modules in the system.

**3) Print Reports.** Reports are Trial Balance, General Ledger and other financial reports the user has specified in the Report File Maintenance section.

**4) End of Period Update.** To update the files.

## Setting up data disks

Clearly set out in the front of each manual is information regarding setting up data disks for use with the system. Once again it is the user who specifies file sizes in accordance with needs. Eg a user can set up a data disk to cater for 200 customers or as many as 2300 customers or as much as the disk will hold. A big system could set up a data disk for each module with the ability to store large amounts of data or a smaller user could restrict the whole system to one data disk if thought sufficient.

## System requirements

The icing on the cake is that all you need to run this comprehensive package is a basic 512K Amiga set up. An extra disk drive is useful but not essential and does not detract from using the standard system. This puts the package within reach of all Amiga owners without any prerequisite for expensive memory upgrades.

## A general overview

Businessware is a highly impressive package, which has provided a very comprehensive solution to the Amiga business needs. It has left no area uncovered other than that of a Payroll module which I will come to later. The detail available to the user of this product is such I have never seen before on the Amiga or indeed any system I have been involved with. Great attention has been paid to all aspects such as a proper audit trail of all transactions generated by the system, the ability to print any of the files used or parts of, plus the options available within each module. Another huge plus is the total flexibility the system offers, the user will feel that he is controlling the system rather than is the system leading him down a narrow predetermined path. The system is very simple to operate being menu driven and each module operates in the same way as others in the suite; each comes with its own operating manual, very well presented and set out in a way that is easy to understand. Even those who have had no prior computer experience should have no trouble here. It is suitable and flexible enough for use in any country.

Meridian Systems do not attempt to provide a Payroll Module. Income taxes vary from country to country so much that to provide a general one to fit in with the aims of this package would be virtually impossible. The solution is to buy a payroll package in the country of use and enter the payroll totals manually to the General Ledger module in this package.

Thus, for Amiga owners worldwide looking for a good accounting package, look no further, this is an excellent product. To those who would like to purchase an Amiga but had doubts because of the lack of a good business package, your time has come, this is it.

Amiga Businessware pricing is as follows: Individual Modules RRP \$249  
Business Pack I \$649  
Business Pack II \$449  
Full Accounting System \$999  
Distributed by Computermate Australia Pty Ltd, (02) 457 8118. ■

# Vector Adder

*Vectors are often messy when drawn on paper, and can be very inaccurate. This new program by Andrew Baines solves the problem by calculating the answer for you.*

FOR THOSE WHO are unacquainted with physics and vectors through not choosing the subject at school or those who chose it but it has slipped their minds, a quick explanation. A vector has direction as well as magnitude. That's the book's explanation. What it means is that we need vectors to answer questions like this:

If a man walks 12km east, 15km north, and 20km west, how far is he from his starting point?

Usually, to work these out on paper, we would draw a line 12cm long east, put a little arrow on it pointing east, from there draw a line 15cm long and heading north, and then draw a line 20cm long and heading west. Then we measure the distance between the finishing point and the starting point of the man. A logi-

cal and perfectly acceptable answer can be obtained this way with the use of a ruler and a protractor. But when we come up against angles like 57 degrees, 34 minutes, things start to become a little too hard for our pencil and paper approach.

There is another way of working these things out, however. Remember those wonderful sine and cosine rules you learnt at school? Well, they're back. Diagram one shows a triangle, and the sine and cosine rules. To add a vector, we use the cosine rule to calculate the length of the vector, and the sine rule to calculate the angle of the vector from north.

Unfortunately, it isn't that simple, BASIC insists on using radians instead of degrees. So, first we must convert to radians, then calculate the vector, then convert to degrees again. And the sine

and cosine rule don't use the conventional compass bearings to calculate things, so we must account for this also. *Vector Adder* handles all of this, and allows for multiple vectors to be added at the same time. Subtracting a vector means you must enter the direction of the vector being subtracted in reverse, eg if its north, it becomes south. *Vector Adder* will also give you the answer relative to the north or south axis, eg, the question above comes out as: 17km, north 28 degrees west, or 28 degrees west of north.

I won't explain how the program works - I don't exactly remember. But it does work, and can make your next physics assignment as accurate as possible - draw the diagram, and use *Vector Adder* to give you the answer.

## AMIGA VECTOR ADDER

'vector adder

'written by Andrew Baines

'Copyright (C) 1988 Micro Creations

PRINT "Vector Adder

PRINT "Copyright (C) 1988 Micro Creations

PRINT

PRINT " N=0

PRINT "W=270 + E=90

PRINT " S=180

PRINT

PRINT :PRINT "Please don't enter negatives, reverse the direction of the vector.

INPUT "Number of vectors to be added",n

IF n=0 THEN n=2

DIM v(n), l(n)

pi=3.141592654#

FOR i=1 TO n

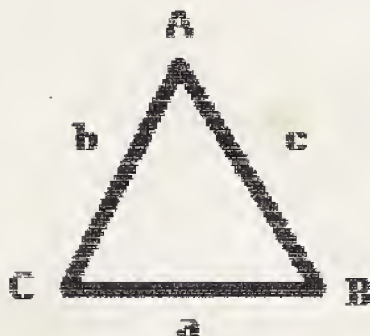
PRINT "Length of Vector ";i;

INPUT l(i)

PRINT "Compass Bearing of Vector ";i;

INPUT v(i)

v(i)=v(i)+270



**Sine Rule:**

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

**Cosine Rule:**

$$c^2 = a^2 + b^2 - 2ab \cos C$$

convert:

IF v(i) > 360 THEN v(i) = v(i) - 360 :

GOTO convert v(i) = 360 - v(i)

NEXT

v1=v(1):l1=l(1)

FOR i = 2 TO n

v2=v(i):l2=l(i)

GOSUB calculate

v1=b2:l1=v1

NEXT

GOTO ender

calculate:

v3=v2+180

a=ABS(v1-v3)

vl=(1^2)+(l2^2)-(2\*1\*l2\*COS

(a\*pi/180))

IF vl>0 THEN vl=SQR(vl)

b=l1\*SIN(a\*pi/180)/vl

b2=ATN(b/SQR(-b\*b+1))

b2=b2\*180/pi

b2=b2+v2

RETURN

ender:

PRINT :PRINT "Vector Total:

IF b2=360 THEN b2=0

PRINT vl;"units,";

FOR i = 0 TO 3 :READ di\$(i):NEXT

b2=360-b2:b2=b2-270:IF b2<0 THEN

b2=b2+360

IF b2>360 THEN b2=b2-360

b=b2/90:a=INT(b):IF a=b THEN a\$=di\$(

b):GOTO endat

ON a+1 GOTO north1, south1, south2,

north2

north1:

a\$=di\$(0)+STR\$(b2)+di\$(1):GOTO endat

south1:

a\$=di\$(2)+STR\$(ABS(b2-180))+di\$(

1):GOTO endat

south2:

a\$=di\$(2)+STR\$(ABS(180-b2))+di\$(

3):GOTO endat

north2:

a\$=di\$(0)+STR\$(ABS(360-b2))+di\$(3)

endat:

PRINT a\$

INPUT "press return to continue",z\$

RUN

DATA north, " east", south, " west

# Amiga Live!

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# Mind if I interrupt?

*Of all the programming techniques available on the C-64, there are few as powerful as using the Hardware IRQ Interrupt. Oben Candemir explains some of the techniques involved.*

**T**HE HARDWARE IRQ Interrupt vector (a vector is simply an 'address' to tell the operating system where a particular routine is kept in memory) is located in page three of memory at \$0314 and \$0315 (788 and 786 in decimal). Normally this vector 'points' to \$EA31 (59953), the system interrupt handling routine located in the KERNAL ROM.

What happens is, that every 1/60th of a second ('jiffy') the operating system jumps to \$EA31 to update the system and scan the keyboard.

Now all this is fine, but how can this be used to our advantage? Well, that's easily answered if you can imagine the power offered by the operating system being able to check and execute a routine we've stored in memory every sixtieth of a second. This is easily done by 'tricking' the Operating System to go to our routine rather than the routine at \$EA31, by changing the IRQ Interrupt address vectors at \$0314 and \$0315.

This means that tasks can be done concurrently with a BASIC program, eliminating the need to continually execute it from within BASIC. In this way all the dirty work can be left to the Operating System once the interrupt technique has been set up. Imagine being able to execute your BASIC program while the Operating System takes care of all the sprite and sound handling work!

1. Firstly the routine we've written for the OS must be in memory. This can be done with an assembler (the method I recommend) or it may be 'poked' into memory (clumsy but nevertheless works). The routine must be in machine

language.

There's been an excellent tutorial on machine language for the past few issues by Andrew Baines in this very magazine. I refer anyone interested to it.

2. Next, the routine to change the IRQ vector must be in memory. The Tape I/O Buffer \$033C-\$03FB (828-1019) is a convenient location in most cases. The routine must:

\* Disable Interrupts.

\* Change the IRQ vectors \$0314 & \$0315 to point to our main routine (1) already in memory.

\* Enable Interrupts.

3. To cancel/break the routine all you need to do is type SYS 64738 or hit RESTORE while holding RUN/STOP. [WARNING: SYS 64738 resets all memory whereas the RESTORE method doesn't and allows re-execution]

If in setting up you are unfortunate enough to ever crash the machine, don't despair (unless you haven't copied your work, then you are free to shoot yourself if you wish!). You can always start over. Remember learning isn't always easy!

Now I'd like to take you through a simple hands-on example. The routine we shall set will be a short program to change the background screen colour.

```
2.
$C000 LDX $FB ;load previous colour
value
$C002 INX ;increment this value by 1
$C003 STX $D020 ;change bckgrd. colour
$C006 STX $FB ;save this value
$C008 JMP $EA31 ;VERY IMPORTANT!!! Transfers control to normal in-
```

terrupt routine.

**Note:** The omission of JMP \$EA31 is the main cause of program failure, therefore if you ever write a routine intended for use with the interrupts technique don't forget this!!

By hand this routine can be changed into the following decimal numbers for 'poking' into memory.

```
ROUTINE#1:
166,251,232,142,032,208,134,251,076,
049,234
```

To poke these numbers into memory use the following BASIC program:

```
10 FOR T=0 TO 10:READ S:POKE
49152+T,S:NEXT
20 DATA
166,251,232,142,032,208,134,251,076,
049,234
```

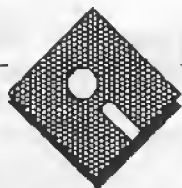
Execute the program and the routine will now be in memory. Next we must set up the vector change routine. This is as follows.

```
$033C SEI ;disable interrupts
$033D LDA #$00 ;load low order byte
of $C000
$033F STA $0314 ;change low order
byte of IRQ to this
$0342 LDA #$C0 ;same for hi order byte
$0344 STA $0315
$0347 CLI ;re-enable interrupts
$0348 RTS
```










This routine when 'translated' to decimal runs:

*continued on page 60*

# Disk magazine No. 12



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ROUTINE#2:120,169,000,141,020,003,  
169,192,141,021,003,088,076,000,192

The following BASIC routine pokes this routine into memory. Type NEW and then enter this program.

```
10 FOR T=0 TO 14:READS:POKE
828+T,S:NEXT
20 DATA
120,169,000,141,014,003,169,192
30 DATA 141,015,003,088,076,000,96
```

Type RUN. Nothing happens, right? Let me tell you that this is all an illusion. We've just set up the interrupt technique. All we need to do now is call the vector change routine at 828.

Type: SYS 828

3.

See it? You can still operate the computer in BASIC but note how the Operating System is executing the routine at \$C000 (49152) without us having to do anything. Although the program example is very simple for convenience the same effect can be achieved with any other machine language routine stored at \$C000. Seen enough? Hit the RESTORE key.

## How can you do it?

Unfortunately the interrupts technique is only readily usable by the machine language programmer. This might even encourage more people to learn programming in assembly code/machine language. I guarantee that it will grow on you.

For the machine language programmers however the interrupts technique may be a life saver sometimes. I remember I'd been stuck for a solution to programming the function keys. When I was on the point of despair a friend of mine suggested using the interrupts technique.

Very quickly the answer emerged and not only was I able to use the usual four function keys + SHIFT function; I was able to squeeze out eight more giving a total of 16 functions with four keys! ■

# 128 Corner Geopaint

*In this month's issue, we will take a look at Geopaint, the graphics department of the Geos package.*

With the release of *Geos 128*, the opportunity to up-grade *Geopaint* with a host of extra facilities was wide open, but instead, there have been only two changes from the original 64 version. The first difference is, of course, the capacity to work with a full 80 column screen (more on that later), and the second is the ability to remove the tool-box from the picture to allow full screen drawing and viewing.

It would have been nice to have had some of the extra facilities that other products such as *Advanced Art Studio* include in their programs. Features like a continuous line tool, multiple magnification modes, re-scaling of windows, colour exclusion and priority etc. All these additions would indeed have lifted *Geopaint* well above the pack.

However, even in its present form, it is still a powerful graphics program, with the added bonus that all graphics created from *Geopaint* can easily and quickly be transferred to your *Geowrite*, *Geofile* and *Geopublish* documents.

As there have not been any changes to the toolbox (or the method of operating the various brushes, pens, fills, patterns etc) from the original *Geos* program, I will not go into full descriptions of these items in this article. For newcomers to *Geopaint*, the GEOS manual gives good coverage and illustrations of the many options available. This month's column is simply meant to give a few hints and tips on the various techniques that can be used to get the most out of *Geopaint*.

## How will it print?

One of the first steps to take when using *Geopaint* is to work out what the end result of your work will finish up as when printed, as opposed to what it looks like on screen during the creation period. Most printer manuals will tell you how many dots per inch there are across the screen, but you also need to know if the printer has the same resolution 'down screen'.

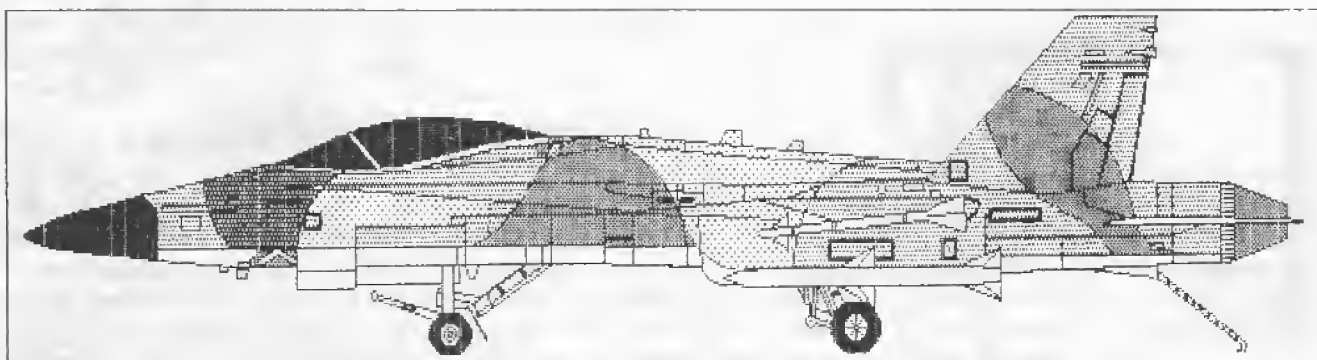
For instance, the Citizen 120D printer that I use has 60 dots per inch across screen. Therefore, in *Geopaint*, when using the line tool (which gives you a readout of pixel length as you use it) a line 60 pixels long will print out as one inch. However, to get a vertical line of one inch on a printout using a Citizen 120D, the number of pixels required 'on screen' is 76.

Accordingly, to finish up with a printout of a one inch square, my 'on screen' picture will look like a rectangle as I draw it. This can sometimes make it hard as you paint 'on screen' to know what the finished product will look like on paper. However, all this means is that you will have to do a bit of experimenting with your own printer to see what the final product will look like.

This point leads me back to the earlier matter of using *Geopaint* in 80 column mode. If you think it can sometimes be difficult in 40 column mode working out whether you have a square or a rectangle, or a circle or an ellipse, try it using 80 columns. As an exercise in masochism I drew a picture (in 80 column mode) which, on screen, looked like the perfect average family car. However, when I went to print, the end result was a stretched limo that even J. R. would have been proud of. If only real life was so easy.

For the reasons just explained, I pre-





fer to use *Geopaint* in 40 column mode if I am drawing an object such as the RAAF Hornet shown in illustration A. However, the 80 column mode comes into its own when doing technical drawings such as the house plans shown in illustration B.

In 80 column mode, the 'on screen' picture is about 1/5th the size of the actual printout. Therefore, a lot less scrolling is required, and for things such as house plans, schematic drawings, bar graphs etc, where distortion is not a problem, life becomes a lot easier.

### Grid file

The first step in a drawing such as the Hornet is to create a grid file. Save this as a separate file called "grid", and use it each time you wish to do a full page

drawing (just duplicate the grid file and re-name it to the current item being drawn). One inch squares are a good size as they don't clutter up the screen and there is less erasing of the grid lines as you work on the drawing. It is also a good idea to place a number in the corner of each square as you create the grid so you know where you are 'on screen'. Print out the grid file and then trace the item to be drawn on to the printout.

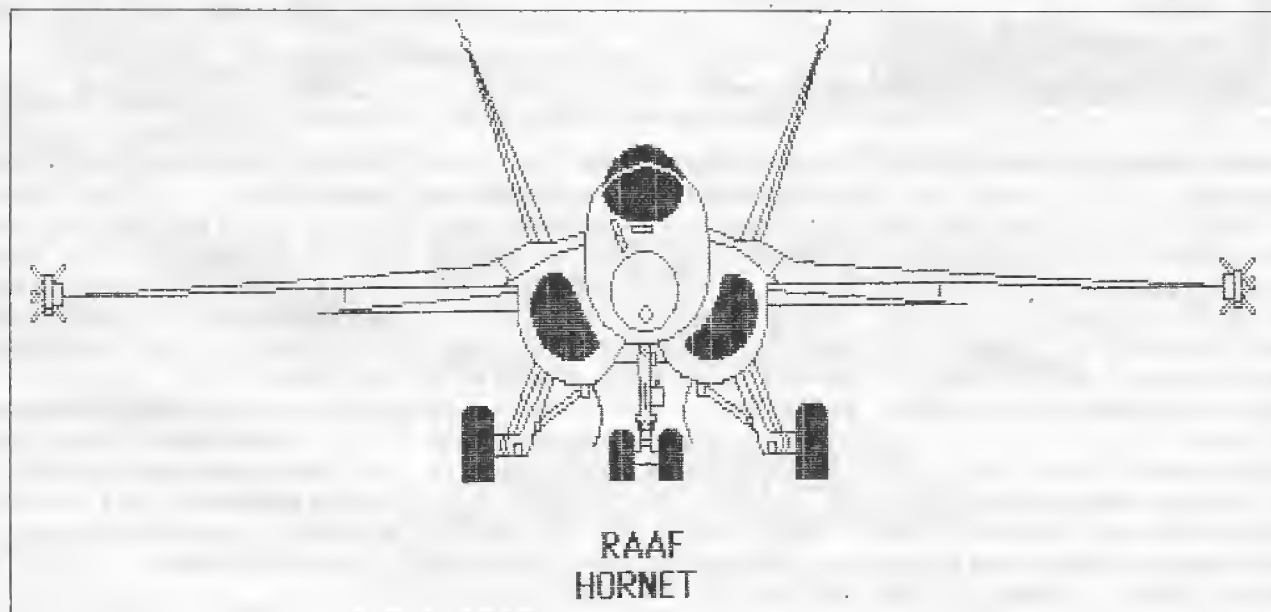
Now, start at the top of your drawing and work your way down screen. As you complete bits and pieces of your work, make sure you keep saving it to disk often to prevent major catastrophes.

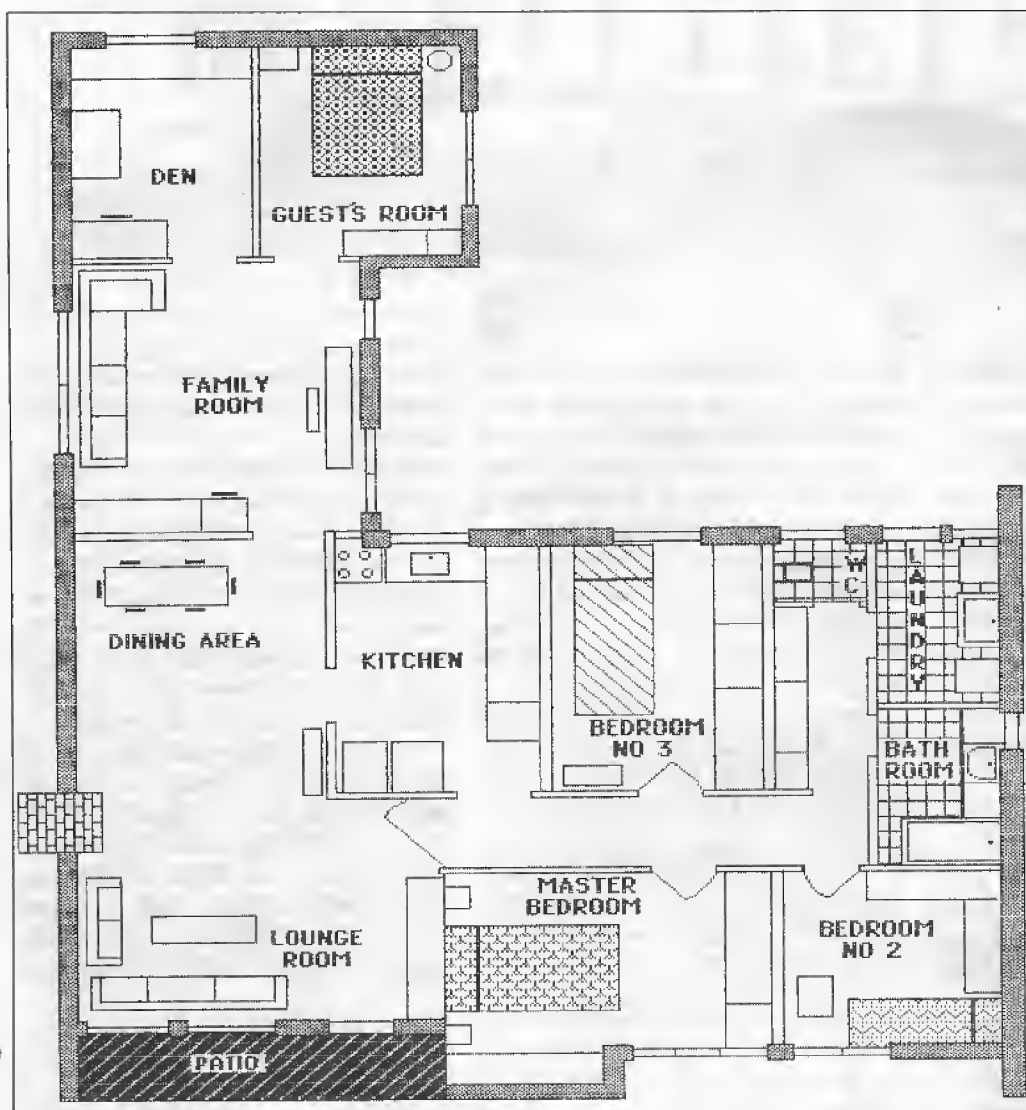
By up-dating regularly, it also allows you to make good use of the "undo" option, which deletes all work completed since the last up-date. This option allows

you to try different effects until you come up with the one just right for the job at hand.

With the Hornet, I started with the tail at the top of the screen, and worked my way down to the nose. I also did quite a number of printouts as I went along to compare to the original that had been drawn on to the grid paper. This made it easy to rectify any major differences from the original before too much work was completed on each section.

Quite a lot of the work was done in pixel edit mode. Although the manual tells you that you can use all the tools except the edit box and the text icon whilst in pixel edit, this is not quite correct as both the hollow circle and filled circle tools will not work in pixel mode. Generally though, most of the work done





running. The patio, walls and tiled areas were all done using pattern fills, as were the bedcovers.

By contrast to the *Hornet*, very little work was done in pixel mode. The main tools used were the line tool and the measuring tool. The latter is very handy when working with plans or similar technical drawings, as it allows you to check measurements without leaving any lines or dots on the screen.

Don't forget, the best way to learn how to paint with *Geopaint* is to sit down for a few hours and experiment. Draw circles; fill them with patterns; place patterned squares overlapping them; define areas and move them to different areas of the screen; mirror reverse the image; add text to the picture; change the colours in different areas and then see the results in the final picture. It is only by trying out all of the different tools available to you that you will learn how to get the most out of the program.

You can have a lot of fun with *Geopaint*, all you need

in pixel edit will be completed with the pencil tool.

Virtually all of the undercarriage work, the nose area, the wingtip missiles were done in pixel mode using the pencil tool. The camouflage work was done using the 'pattern fill' tool. Again, in the front view, because of the odd shape of the jet intakes, they were also done in pixel mode.

Another useful function is the "edit" tool. This enables you to define a region, and then either copy, flip, reverse or invert the region anywhere in the current drawing window. In the front view, the

left undercarriage was drawn, then copied and reversed and moved over to create the right undercarriage. When you do this, it is necessary to do a bit of tidying up afterwards as the box that defines the "window" being moved will remove any part of the drawing underneath it when you click on the mouse to set it in its new location.

As mentioned earlier, the house plans were done mostly in 80 column mode, as this gives you the full width of the screen to work on, and only involves down screen scrolling. Once you have set your scale (ie 1" = x feet) you're off and

is the time to sit down and let those creative juices flow.

If you have a Ram Expander, copy the work whilst in Ram. This makes scrolling around the full work area very much quicker, but don't forget to save the file back to your work disk at the end of the session.

Next month, we will have a look at *Geocalc 128* and *Geofile 128*. Don't forget, if you have any questions relating to the *Geos* programmes, send them in to us and we will do our best to assist.

See you next month. ■





# Cadpak 128

Review by Frank Paterson

**T**HE GRAPHICS ABILITIES of computers have always interested me, but unfortunately they remain a mere potential until tapped by a clever programmer and a Michelangelo-type end user. Like most of us, I am neither and must rely heavily on programs such as *Doodle* and *GeoPaint* to get images onto the screen, and of course, that's only half the job.

No computer can supply the artistic talent required to paint pictures such as *Middle Earth* and *The Sergeant Major* which are demo graphics supplied with *Doodle*, or the *Lobster* which is served with *GEOS*.

However, there is some hope for those of us whose artistic talents are limited to stick figures and angles. If you like making line drawings, as in technical drawing, then a program such as *Cadpak 128* is for you.

*Cadpak* is a very understated program. There are no fancy welcome screens with music to load by. Just a plain vanilla 40 column text screen showing the program and programmer's names and a border of asterisks. That soon disappears, to be replaced by the standard hi-res drawing screen of green border, white background and black ink. Other border colours are used as well to indicate which mode you're in, but all have been chosen to optimize light-pen response. More on modes later.

## Configuration

*Cadpak* has to be configured for your printer, and if this hasn't been done (eg a brand new program straight out of the box), the program automatically leads you through a simple configuration process. It's easy - just answer the prompts.

A configuration file is then recorded on disk, and this becomes the default configuration for future use.

If you wish to change the configuration at a later date to suit a new printer, you cannot do it from within *Cadpak* -

you have to load and run a separate program called *CONFIGER* (supplied) which resets the defaults and re-writes the configuration file on the disk.

With the printer configuration set up, you are then prompted to enter the units in which you wish to work - centimetres or inches. It's a rather cryptic prompt, because your response need not be confined to those units; you can specify metres, miles, etc and the program will accept them.

You are then given information on the maximum dimensions of the finished picture (in inches only, unfortunately - the program is American), and from that you work out your answer to the next prompt, "How many units per cm?" or "How many units per inch?". After a slight pause while the program sets up its scaling, you are ready to go.

*Cadpak* is fully menu driven, so the operation of this fairly complex program is kept as simple as possible. The main menu gives you the options to VIEW, DRAW, PRINT, OBJ/FONT, TEMPL/CR, and FILE. VIEW, PRINT and FILE are self explanatory, with further choices in each. For example, you can view or print part or all of a document, and the FILE option contains a number of disk management commands - enough to allow full file management without having to exit the program and execute DOS commands.

## Drawing

Selecting DRAW calls up the main drawing menu, and it is from this menu that most of the work is done. There is a freehand DRAW function which works best with a lightpen, but which can be used reasonably successfully by moving the hi-res cursor with the cursor keys and pressing RETURN when you want to draw a line from your present position back to the end of the last line drawn.

The ragged edge of the brick pattern on the house in Figure 1 was drawn in

this way.

LINE is obviously a frequently used function, and the way it works allows precise positioning of each end. After selecting the line function, you move the cursor in ordinary text-size steps to the general vicinity of where you want your line to start. At the bottom of the screen, you are given x and y coordinates in the units you chose earlier on. The origin is the bottom left corner of your work.

Once in the general area, you press RETURN to activate *Cadpak's* Accupoint feature so that you can position the beginning of the line with 1 pixel accuracy. The screen border turns blue to help you keep up with what mode the program is in. Press RETURN to fix the start of the line, and the border goes green again.

You can now "drive" the other end of the line around to its approximate position using the coarse cursor mode, then activate Accupoint with RETURN to accurately set the end of the line.

At this stage, the screen border is again blue, and the display at the bottom of the screen shows the x and y coordinates relative to the start of the line.

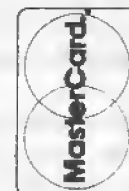
Also shown is the length of the line and the angle at which it is drawn through the starting point.

By using this information, you can move the end of the line pixel-by-pixel until it is positioned exactly where you want it, then press RETURN. The border reverts to green, the line is drawn and the DRAW menu returns.

The LINE function itself has a number of options. You can choose between a solid or a dashed line, and you can choose the size of the dashes. Draw a jointed line, where the end of one line automatically becomes the beginning of the next or specify that a line you are about to draw must be horizontal or vertical, or parallel to the last line drawn, or at right angles to it.

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► This is a typical example of what can be done with Cadpak 128, but it is by no means comprehensive. It would be relatively easy to draw up a scaled floor plan.

Other functions available from the DRAW menu are circle, box, arc, diamond, ellipse, curve, fill, letter, copy, template, objects, measure, erase, rubout, utilities, colour, view, zoom and new drawing. In each case, the shape or work area can be precisely positioned, and its size set, using the coordinate information which is updated continuously and displayed in a window at the bottom of the screen.

CURVE is an interesting facility. It draws a smooth curve which is controlled by the positions of between three and 11 points which you can set on the screen. The line doesn't go through them all, only the first and the last, and is pushed and pulled into shape by the proximity of the others.

The program allows a trial and error process so you can move the points about to push the curve into the shape you want, then see the results and change them if required.

The arches over the front entrance and garage door in figure 1 were drawn this way. On the garage, five points were used. The first and fifth mark the beginning and end of the curve, the third was on the centre line and used to control the height. The second and fourth were either side of the centre and used to pull the sides out a bit to get the right shape.

COPY is very powerful. As the name implies, it allows sections of your drawing to be copied to other parts of your working screen, or between screens (there are two). In doing that, you have a number of options.

You can replace the image in an area with the copied image, or combine the two, or match them so that only those pixels common to both are left on.

Choose between copying both image and colour or image only, and there are also mirror and rotate functions so you

can flip or turn the copied section before it is placed on the target screen.

TEMPLATE allows the user to create a pre-prepared drawing in a special template work area or read one from disk (from special template files) and insert it into a drawing. You can change the size of the picture in the template and rotate it any amount (ie, you're not limited to rotations in 90 degree increments as is often the case) before fixing it into your work.

You could use this function, for example, to take from the disk a design for a swimming pool which may have been drawn to a different scale, re-scale it and rotate it to suit the backyard you are designing and then position it on your plan. Or if you think you may have future use of part of your current drawing, you can save it to disk for later recall as a template.

## Object/font

In similar fashion, using OBJECT/FONT MANAGER in the main menu and USE OBJECTS in the DRAW menu, you can create a series of standard small objects to suit an application. For example chairs, tables and other furnishings for an interior design project can be designed and saved to disk, then recalled for later use when required.

Cadpak contains a limited selection of fonts for customized labeling of draw-

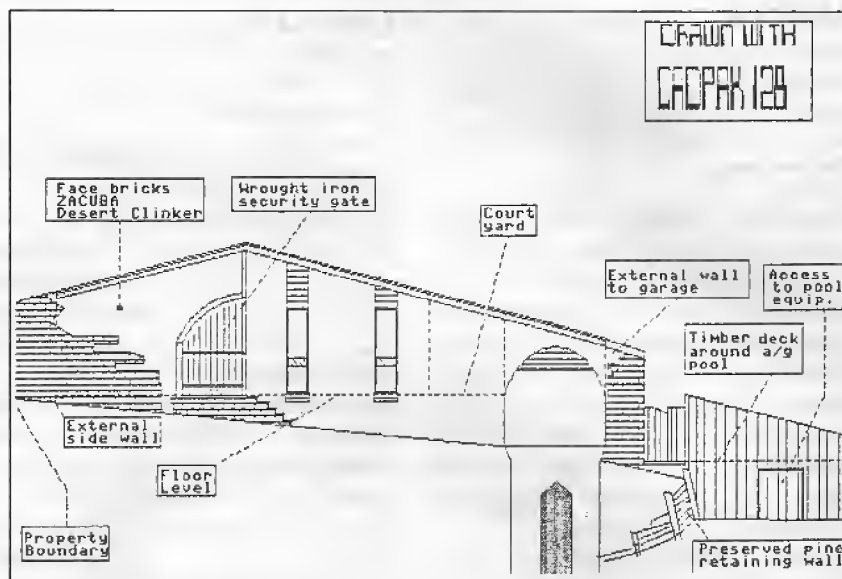
ings, and each can be sized as required in one-pixel increments to suit a particular drawing. If that is not enough, or if you want more type styles, use the Object/Font editor to create new fonts and save them to disk.

FILL does much as you would expect - it allows you to fill areas with one of a range of patterns. Additionally, it allows you to edit a pattern and save it as a pattern file. With this facility, you can build up a set of patterns, scaled if required, to suit various applications. The brick pattern on the house is a stock standard pattern and is not quite to my scale - I could correct that and save the new pattern for future use.

Cadpak's main drawing screen is 640 x 360 pixels, so the screen, being 320 x 200 pixels, is a window on the electronic page. You can move it about using the cursor keys to locate an area in which to work.

The DRAW menu has three modes, REGular, EXTended and TEMplate. In regular mode, you cannot draw outside the current window. In extended mode, you can draw beyond window boundaries (the screen scrolls by as you do it), but not all of the DRAW features are available. Likewise, some of the extended DRAW features are not available in regular mode.

However, you can beat that particular limitation by choosing a window loca-





tion so that you won't have to go beyond its boundaries. Then alternate between REG and EXT modes as required with the F7 key and access all the facilities offered by both modes.

The template mode is a cut-down version of the other two and is used for creating and editing templates. It's a pity that not all of the DRAW features could be retained in this mode, but it is still adequate.

There is a ZOOM feature which allows the user to enlarge a section of the drawing and then edit it pixel by pixel. This is sometimes necessary to correct fine detail or to undo or restore things when you have gone beyond the limits of TRY AGAIN.

Under the UTILITIES option, you can control the parameters necessary for the program's handling of a lightpen so that its response is smooth and accurate. Curves, circles, arcs, etc are drawn in segments. Increase or decrease the number of segments used and so alter the compromise between speed and accuracy.

You can also determine whether the program operates in WRITE mode or ERASE mode. Sometimes it is easier to undo things by re-drawing them in ERASE mode rather than by using the RUBOUT option from the DRAW menu. It is also the UTILITIES option which allows the user to change the size of the dashes in dashed lines, and to relocate the origin (from whence the x and y coordinates are calculated) anywhere in the drawing.

The most rewarding part of using a program like this is seeing your work in hard copy. You can preview it first by selecting VIEW from the main menu, then TOP, or go straight to PRINT which has further options. Print the whole picture in either large or small format, or you may print the current window in either large or small format.

A large whole picture is printed sideways on standard fanfold paper, and by printing large copies of windows you can paste together a very much enlarged copy of your drawing, say for a presentation to a group of people. Screen distortion is compensated for, so that circles are print-

ed as true circles on paper.

## Criticisms

In using *Cadpak* for this review, I only recorded three real criticisms, and one of those is aesthetic rather than functional. Under some circumstances, the information window at the bottom of the screen suffers an incredible flicker. To be fair, the manual does mention this and explains that it occurs because of hardware limitations - the VIC chip is working flat out in this program and the flicker is more or less a product of overwork. The information always remains readable - it's just not very pretty to look at sometimes.

Number two problem I found was that the cursors are sometimes too big and clutter the display, especially when working with small shapes. For example, after you set the start of a line, a cursor remains at the starting point. Another cursor is at the current end of the line, and that's the one you drive around to position the end of the line. In between are two more cursors, evenly spaced along the current length of the line, to give you an idea of whereabouts the line is going to be drawn.

If your line is short, all four cursors are crowded up on each other and it's very difficult to see what's going on. There is a facility to change cursor priority so that screen data can appear on top of or underneath the cursor, but sometimes that is not enough. If there was an option to choose cursor shapes it would help, as you could then choose the least intrusive cursor for a given situation.

The last criticism I have is the RUBOUT function, which seems to me to be clumsily implemented when compared to *Doodle* and *GeoPaint* erasers. The *Cadpak* eraser is made up of four large cross-type cursors set close together so they form a RUBOUT cursor which looks rather like a noughts and crosses grid.

The centre square does the erasing, and it's fixed at 8 x 8 pixels. To erase, you have to move this giant arrangement so that its relatively small effective area is over the bit you want to erase, then press RETURN. Move it with the cur-

sor keys (only in character sized steps; it's not a hi-res cursor), then press RETURN to erase another 8 x 8 pixel block, and so on.

It would be so much easier if you could enable an eraser and then drive it around the screen, as in just about every other graphics package I have used.

## Manual

The manual is well laid out and comprehensive. It is arranged in three sections. The first gives an overview of the program, its various modes and their associated border and menu colours, and how the program handles dimensions and angles.

This section leads into an item-by-item discussion of what each option on the menus does. These are fully detailed and complete and when selection of one option leads to a sub-menu, the sub-menu is discussed fully before going on to the next option.

The second section is a set of five tutorials, each dealing with a major feature of *Cadpak*, followed by some hints and tips.

Finally, there are the appendices which contain information about reading and writing template files, about printers and interfaces and examples of output from *Cadpak 128*.

The review copy was an early version of the program which did not support a mouse. Later versions support keyboard, mouse and lightpen control of all functions, which would make freehand drawing and general program operation very much easier.

*Cadpak 128* is not a toy for the kids. It is complex and powerful and its features have been designed for the serious user. Yet within that context, it has been kept as easy as possible to use. The grumbles I have are not really serious, and I'm glad it has become part of my library.

Our review copy of *Cadpak 128* from Computermate Products in Sydney, telephone (02) 457 8118.

RRP is \$99.00, which I think is more than fair. ■

# Big Blue Reader

by John Ward

**M**ANY PEOPLE these days, who work in an office, have access to an IBM PC or compatible and a laser or other high quality printer of the type they could never justify for use with their Commodore at home.

Until now, however, there has been no way to make use of this superior hardware (which the Boss has gone to no end of trouble to provide you with) for those times when you might want to run off that all important resume, set of invitations, club circular etc.

No doubt you have painstakingly put together such a masterpiece between midnight and dawn or whilst the kids were remodeling the house around you, only to end up having to output it on the old Galling gun to give the usual homemade finish.

Here then, is *Big Blue Reader*, a program which allows you to copy Ascii or SEQUential files output from the word processor on your C128 or C64 onto an MS-DOS formatted disk for printing or further manipulation by the word processor in your office.

Alternatively, you can use *BBR* to transport Ascii files output from the word processor on your office PC for further processing at home on your Commodore.

Using *BBR 128/64* (the C64 version called the *Little Blue Reader* is available on a separate disk) you can even format the blank disk in MS-DOS on the 1571 prior to dumping the Ascii file.

Formatting of the 720K 3.5 inch MS-DOS disks, however, cannot be performed with any 1581 to date (Commodore may fix this), so one simply formats the 720k disk on any IBM compatible prior to dumping the file using *BBR 128/64*.

If you are one of the many thousands of Australians who own a Commodore 128 and 1571 or 1581 disk drive, or have more recently purchased a Commodore 128D or upgraded your old Commodore 64, you are probably already aware that the 1571 and 1581 are sophisticated double sided disk drives containing advanced hardware and software not found in other microcomputer peripherals.

What you may not have been aware of,

*"BBR 128/64* (the C64 version is on the same disk) allows users to transfer files generated by IBM-compatible software to Commodore DOS files, and vice versa."

however, is that whilst the Disk Operating System for the C128 and C64 standard Commodore Group Code Recording (GCR) format is resident in the drive, when the drive is called upon to read or write a file in one of the many existing CPM Multiple Frequency Mode (MFM) formats it does so under the control of the host computer operating in CPM mode.

*Big Blue Reader 128/64* utilises the fact that the physical format of these double density MFM disks, from such computers as Kaypro, Osborne, Epson etc. (whose formats the 1571 can read and write to, but - to date - not format), is the same as that used by MS-DOS in IBM's PCs and compatibles.

*BBR 128/64* (the C64 version is on the same disk) allows users to transfer files generated by IBM-compatible software to Commodore DOS files, and vice versa.

Once text files, for example, are translated from IBM MS-DOS compatible formats to Commodore formats using *BBR 128/64* the files can be worked on using most Commodore word-processing programs, (and those which run on the C128 in CPM mode, such as *Wordstar*) and then transferred back to the IBM MS-DOS format.

Most present generation wordprocessors worth their salt can input Ascii files using such commands as "import" and "merge" and output Ascii files with "export", "print to disk" etc.

Given such a wordprocessor is available both in the office and on your Commodore at home, the only other "chore" that has to be taken care of is that of establishing the need for "carriage returns" and "line feeds" and for the need to suppress any other non-standard control codes in the particular Ascii file output by the wordprocessor at each end.

Once the particular needs of each end have been established it becomes a sim-

ple matter to perform the transfer in either direction using the well laid out menu screen of *Big Blue Reader*.

In fact, in the case where the wordprocessor at each end is the same, such as *Wordstar*, running on MS-DOS at the office and under CPM at home, then it is a trivial exercise as "carriage returns" and "line feeds" and embedded control characters are automatically correct at each end, with printout from either end being identical in each case.

*BBR 128/64* can read and output files from/to Commodore, MS-DOS and C128 CPM formatted disks.

In addition it can format disks in each of these modes using a 1571 disk drive (1581 can only read/write 3.5 inch MS-DOS disks and as yet cannot format in MS-DOS).

Once the directory of the disk in the drive has been read in and displayed by *BBR128/64* it is a simple matter (again using the on-screen menu) to copy, print (to either screen or paper) the particular file, renaming and converting to Commodore Ascii as it goes if required.

As well as a complete status report on the number of files and bytes used and still available on the disk whose directory is displayed, current time and date are displayed together with that for the file being examined (this is probably the only feature not easily discovered without referring to the accompanying manual).

Apart from the very occasional lock-up (usually cured by switching the drive off and then back on again) due to the large amount of control data being transferred between the computer and the drive, *BBR128/64* represents a reliable and very usable means of converting files between Commodore 128/64 and MS-DOS machines using the 1571/1581 disk drives.

Available through Prime Artifax (see advertisement this issue) it represents very good value at the same price in local Aussie dollars as that at which it is available in the United States.

This program is definitely a must for all those C128/C64 enthusiasts who realise there is "still a great deal of life in the old machine yet" and who like myself, still see it as representing the best value for the dollars spent of any microcomputer available today.

Distributed by Prime Artifax (02) 817 0011 for \$54.95. ■

# Adventurer's Realm

by Michael Spiteri

**Hello folks!** Welcome to the deep caverns of The Realm, Australia's only dedicated adventure column for Commodore computer users.

## New role-playing department

This month we welcome Kamikaze Andy to the Help Team as our Role Playing Specialist. Andy became famous for solving *Beyond Zork* a few months back. Well, he'll be bringing you news and views of all the latest role-playing games, and he'll help anyone stuck (if he can) in most role-playing games such as *Beyond Zork*, *Bards Tale*, *Ultima* series, etc. However, please note that there is a different address for any Role-Playing game queries.

Write to:

**Role Playing Dept.**

**44 Hawkesbury Drive**

**Willetton WA 6155**

Please note that the above address is for role-playing queries and problems only. All other mail should be directed to me at the following address:

**Adventurer's Realm**

**1/10 Rhoden Court**

**North Dandenong Vic 3175**

Write to the above address for hint sheets and general adventure problems. If it's a wargame letter, mark the envelope "Wargame Dept." and it will be passed on to Barry Bolitho.

No matter what section you are writing to, if you are expecting a reply, always enclose a stamped addressed envelope, and if you are requesting hint sheets, please make sure the envelope is large enough!!

## Special: War games hints and tips

Ross Moore of Bellato in NSW sent Barry Bolitho a huge selection of hints and tips for popular games, and it would be a injustice to all wargamers not to publish them.

**Battle of Britain:-** Always keep one squadron from each airfield up at all times. That way you won't be caught on the ground by the German raids. Try to meet the raids over the channel.

**Theatre Europe Warsaw Pact:-**

1) Use your Amphibious and Airborne armies to attack Denmark.

2) Don't waste air reinforcements on units with low supplies and army

strengths.

3) Use the resupply phase to build up four or five strong units (9,9,9)

4) Put all air units into Air Superiority for the first few moves, then start moving them into other missions.

5) Leave reflex off.

6) You can get away with one nuclear strike. If you are getting bogged down, use it on one of the high army number units (USA or West Germany).

**Theatre Europe NATO Forces:**

1) Put everything into Air Superiority. Don't waste anything on reconnaissance missions till you have built up your armies into a fairly strong force.

## Realm's telecommunications department

Those of you lucky enough to own a modem can now log on to either one of the two official Realm adventure bulletin boards. The service costs you just the price of a phone call.



Down Under BBS

(02) 674 6647 (NSW)

Terminal BBS

(09) 389 8048 (WA)

We are now looking for bulletin boards in all other states!!

- 2) Repeat and build up your armies.
- 3) Go for their supplies.
- 4) Use the special missions.
- 5) Leave reflex off.
- 6) As with the Warsaw pact, use a nuclear strike against one of the cities close behind enemy lines.

**Crusade in Europe:-**

1) Concentrate all four Air wings on the division at Omaha beach. Keep the pressure on it and you will blast it off the face of the earth.

2) Then move as fast as possible straight through the middle (keeping a clear alleyway open for your supply lines) making for Alencon. That will cut off resupply to the German forces in the west. Warning: this doesn't always work.

3) Don't waste men and material on trying to break through at Caen. When you have broken through in the west, encircle them cutting their supplies.

4) As soon as possible, attack the supply dump behind Paris. ■



## Zorker of the Month

This month's typical Zorker is Gerry Dwyer of Seymour in Victoria. One hint sheet for *Zork* wasn't enough to help Gerry, so he asked for another one. If you mean Part II, Gerry, there isn't one. Unless you want a *Zork II* hint sheet. I better stop - most Zorkers are easily confused. There are single hint sheets for all three *Zorks* available, with the possibility of a *Beyond Zork* hint sheet some time in the future.

## News - Views - Rumours

There is a rumour going around that *Ultima 5* exists. If anyone knows of its existence, please write to the Realm.

Questor should now have available the latest Infocom classics *Sherlock Holmes*. This game features an inbuilt hint book! I wasn't too keen on this idea as it makes it too easy to get help, but I am told that some of the hints given are red herrings!!

## Hobbit Trivia

Thought I might print the *Hobbit* score sheet, sent to me by Jason Butler many many months ago .....

- 2.5% Going east from Bilbo's home.
- 5.0% Entering troll's cave.
- 2.5% Going east from Misty Mountains.
- 2.5% Entering Beorn's hall.
- 12.5% THOROUGH exploration of Goblins' Caves.
- 2.5% Going south from spider's web.
- 2.5% Going north from spider's web.
- 5.0% Going into the Elvenking's dungeon and leaving by the west exit.
- 10.0% Making a second visit to Long Lake.
- 2.5% Reaching the ruins of Dale.
- 5.0% Entering the smooth straight passage.
- 25.0% Depositing treasure in chest.
- 2.5% Finding side door.
- 20.0% Entering hall where dragon sleeps.
- 100% Total

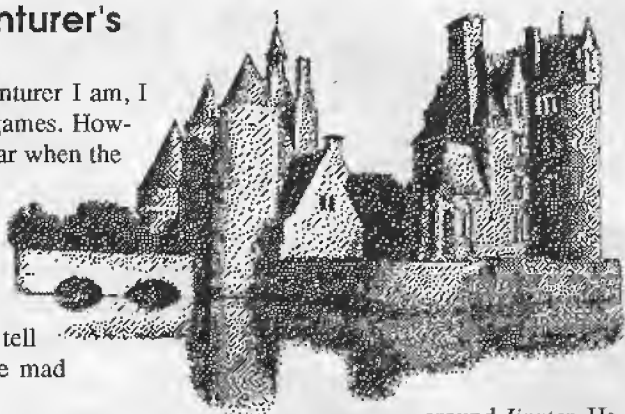
## Troubled adventurer's department

Being the super-adventurer I am, I don't often get stuck in games. However, it is that time of year when the virus spreads across the nation and somehow I picked it up! So, if anyone out there has played *Police Quest*, maybe they would be kind enough to tell me how to deal with the mad bikies!!

Richard McAlpine of Hammondville in NSW is stuck in a couple of games. First is *DejaVu*. He wants to know how to open Ace Harding's door as well as Dr Brody's door!! Then in a game that I have never heard of - *Winterwonderland*. A certain grizzly bear is causing havoc. You could try the Adventureland method of yelling.

Tony Sharpe of Cessnock in NSW is stuck in *Legacy of the Ancients*. He can't find the magic ice needed to reach level 2. Hmm, quite a chilly problem.

Amiga maniac Bill Beggs is jinxing



around *Jinxter*. He wants to know how to get the people to throw money at him (MS: *If you find out, tell me, then I can get rich by just walking down the street!!*)

Meanwhile, an anonymous friend of Bill Beggs is stuck in *Uninvited*. Here are his problems . . .

- 1) How do you get past the dogs?
- 2) How do you get through the light fitting in the bathroom?
- 3) How do you get past the ghost in the small room off the kitchen? ■

## Trials and tribulations



Source: Infomat  
by Charles L. Baker

### Copy protection blues

I have a copy of Electronic Arts' (EA) *DeluxeVideo* software package, which came with the Amiga 500 special-offer software bundle. I have not tried to use it because it uses a keydisk protection system which requires the original to be inserted during the program loading sequence.

EA generously offers to send you the unprotected version of the software you just paid handsomely for (list price on *DVideo* is \$129.95) for another \$20 and proof of purchase.

Frankly, my view is that if you can provide proof of purchase, then a modest

charge for the cost of the replacement disks, plus postage and handling, should be more than enough to pay for an unprotected set of disks.

If EA's point is simply to make sure the customer has paid for a copy before letting an unprotected version of the program loose, then a smaller fee will certainly cover the costs. If the point is a few extra bucks profit, then EA would save us all a lot of trouble if they would just kick the price up the extra \$20 and sell the program unprotected in the first place.

Fortunately, Electronic Arts began shipping *Deluxe Series* products in un-

protected versions April 1. Those who purchase the protected version after April 1 can upgrade to the unprotected version for the first ninety days after purchase at no charge, simply by sending in the program disk and their dated receipt. Following the ninety-day warranty period, the buyer may upgrade by sending \$7.50 check or money order plus the program disk and dated receipt.

I purchased EA's *DeluxePaint II* in March and found that the same keydisk protection was in use when I ran first ran it recently. Unlike the *DVideo* program, I wanted to use the *DPaint* software right away.

I made a working backup as per the *DPaint* documentation, and then went through the boot sequence according to instructions. I selected the icon for the program itself, the load sequence began, and the requestor (a small window that requests the user do a specific action or make a decision) for the keydisk popped up. I inserted the keydisk, and the requestor changed to acknowledge that the original disk was now on the system. The manual said to hit the cancel button on the requestor.

I did.

Welcome to the game of "Requestor Wars".

The requestor disappeared for two seconds or so, and came back. I hit cancel. Gone two seconds. Back again.

I rebooted, tried several combinations of disks and drives, and in no case would the program load.

Three Bronx cheers for copy protection, folks.

I checked with a friend who had also recently purchased *DPaint* and found that his copy was working fine. However, he was not booting the system from the *DPaint* disks, but was running from a Workbench disk.

I tried booting the system from another disk, then opening *DPaint*. After another short bout of requestor wars, I noticed that the internal drive and drive DF1:, which on my system is a 5.25-inch model 1020 drive, were being ac-

cessed for the keydisk, which was in drive DF2:, my outboard 3.5-inch drive.

I then tried popping the boot disk from my A500 internal drive, and putting the keydisk there, with the *DPaint* working copy in drive DF2:. I hit cancel, after which DF0: and DF2: got busy, and the program loaded properly.

Most likely, the presence of the 5.25-inch drive mounted on the system was confusing the copy-protection system.

The problem with *DPaint* is obviously copy-protection programmers who aren't too clever.

While the requestor asks for a volume (a disk) by name, the programmers apparently made the decision to check the specific drives designated DF0: and DF1: for the protection code written on the master disk.

On a system designed for multitasking and multiple drives, the smart thing to do would be simply to call for the disk by name, and then let the DOS take care of locating the drive where the volume is inserted and reading the code from it. My guess is that the code is probably written to a "non-standard" sector on the master disk.

I booted the system with a *Wordperfect* disk modified to mount the 1020 drive to the system, and had *Wordperfect* running when I loaded and ran *DPaint*. The two programs operate fine together.

## The 1020 tale spins on

Part of the problem with having a 1020 drive attached to an Amiga system

### About the author

Charles L. Baker made his acquaintance with computers in the early '70s with a college night-job running a DEC PDP 8/E time-sharing system with 12 terminals located on 6 different university campuses. Besides computer and astronomy articles, he also writes horror, fantasy, and science fiction, and is a free-lance editor. This article appeared originally on InfoMat which is a news service for bulletin boards.

is that the 1020 does not autoconfigure.

Commodore instructs users to attach all 1010 drives to the Amiga first, then make the 1020 the last drive in the chain.

"This doesn't work with the Amiga 500, nor, I have been told, with the 1000. The system only recognizes the 1020 if it is attached first, and designated DF1: (the internal drive is designated DF0:). Any 1010 drives are then chained after.

Actually this is useful in relieving the Amiga 500's power supply, which is strained just driving the internal RAM expander and one 1010 drive. The 1020 has a built-in power supply, and 1010 drives chained to the 1020 will draw power from the 1020 rather than from the 500.

If you intend to use one of the non-standard memory expanders for the Amiga 500 that installs on the main CPU board, having a 1020 in the chain to provide power for the extra 1010 drives might ease the load on the A500 power supply.

An upgraded power supply is somewhat cheaper, and would be a good idea in any case, but it won't come with a PC emulator program, or provide extra storage on cheap 5.24-inch disks, which the 1020 does.

The 1020 drive I purchased had the older, V1.1 Transformer IBM PC emulator program packaged with it. I obtained the V1.2 program update from my dealer and tested it with my system. The program comes up normally, but will not access the 1020 drive (the program boots from a 3.5-inch disk).

Subsequently I heard via the Amiga Alliance on QuantumLink that the 1020 requires a hardware fix to run *Transformer* with the Amiga 500, and that dealers should shortly be able to offer this fix to A500 owners who have the 1020 and wish to run the Transformer. ■

# Guide to contributors

**E**VERY MONTH WE receive dozens of submissions from would be writers. For these we are most grateful. If you have considered writing for the *Australian Amiga and Commodore Review*, here's a few guidelines. The majority of contributions are accepted, however as we have a larger number to choose from these days, a few more stringent guidelines need to be met.

**Style:** Easy to read, entertaining and informative. We aim to be an enjoyable easy to read publication - with a smattering of technical articles for those so inclined. We are most interested in tutorials, "how to" type articles, and general hints and tips. Programs are also sought after for our disk magazines, Suite 64 and Amiga Live!

**Format:** Don't include any formatting such as printer controls, centred headings, print styles etc. Put a space af-

ter commas or full stops. Do not indent paragraphs. Numbers under 10 should be typed. We prefer contributions on disk - Commodore 64/128, Amiga, MS-DOS and even Macintosh. Don't double space. Just a straight ASCII text file is all we require. We also accept contributions via modem once you become a regular contributor. Baud rates of 300, 1200, 1200/75 and 2400 are supported.

**What to include:** A brief letter, if it's your first effort. Don't forget your phone number - this is the most important thing! And put your name at the top of the actual article, not just on the letter.

**What you get:** Fame and a little fortune. Writing is a lot of fun. You'll get payment of \$50 per 1000 words - paid about one or two months after publication and a free subscription to the magazine after your third article. We take

receipt of the article as permission to publish - you may not always be contacted before we use your article.

**Where to send contributions:** Post articles directly to *The Australian Commodore and Amiga Review*, 23 Bonnefin Rd, Hunters Hill. Or call (02) 817-0011 to arrange modem transfers. Don't send us your original - we cannot guarantee return, and it may become damaged in the post. Send 5 1/4 inch disks in an Australia Post cardboard Post Pak especially designed for carrying disks. Do *not* use padded post bags - these have a tendency to make the postman want to bend them in half. Amiga disks can just be sent normal mail.

That's it! For a more detailed version of the above, call our office and ask for the complete writers guide. ■

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# OFFICIAL

## BUSINESS COMPUTER SALES FIGURES MAY 1988

(Source: COMPASS GROUP Business Microcomputer Survey, May 1988)

If the next computer recommendation made for your business doesn't include Commodore ask your consultant these questions:

1. Now Commodore business computers outsell both Apple and NEC why aren't they at least on our list for consideration?

2. Have you taken into account that the Commodore PC and Amiga ranges have the same functions as IBM, Apple and NEC and that the average Commodore sale price is far less?

3. What makes the Amiga 500 the largest selling computer in the 68000 range, outclassing the Apple MAC SE?

Once upon a time it might have been true that no one got fired for recommending IBM. Now it is equally true that people ought to get the bullet if they don't at least consider the bullet performer on the computer sales chart: Commodore.



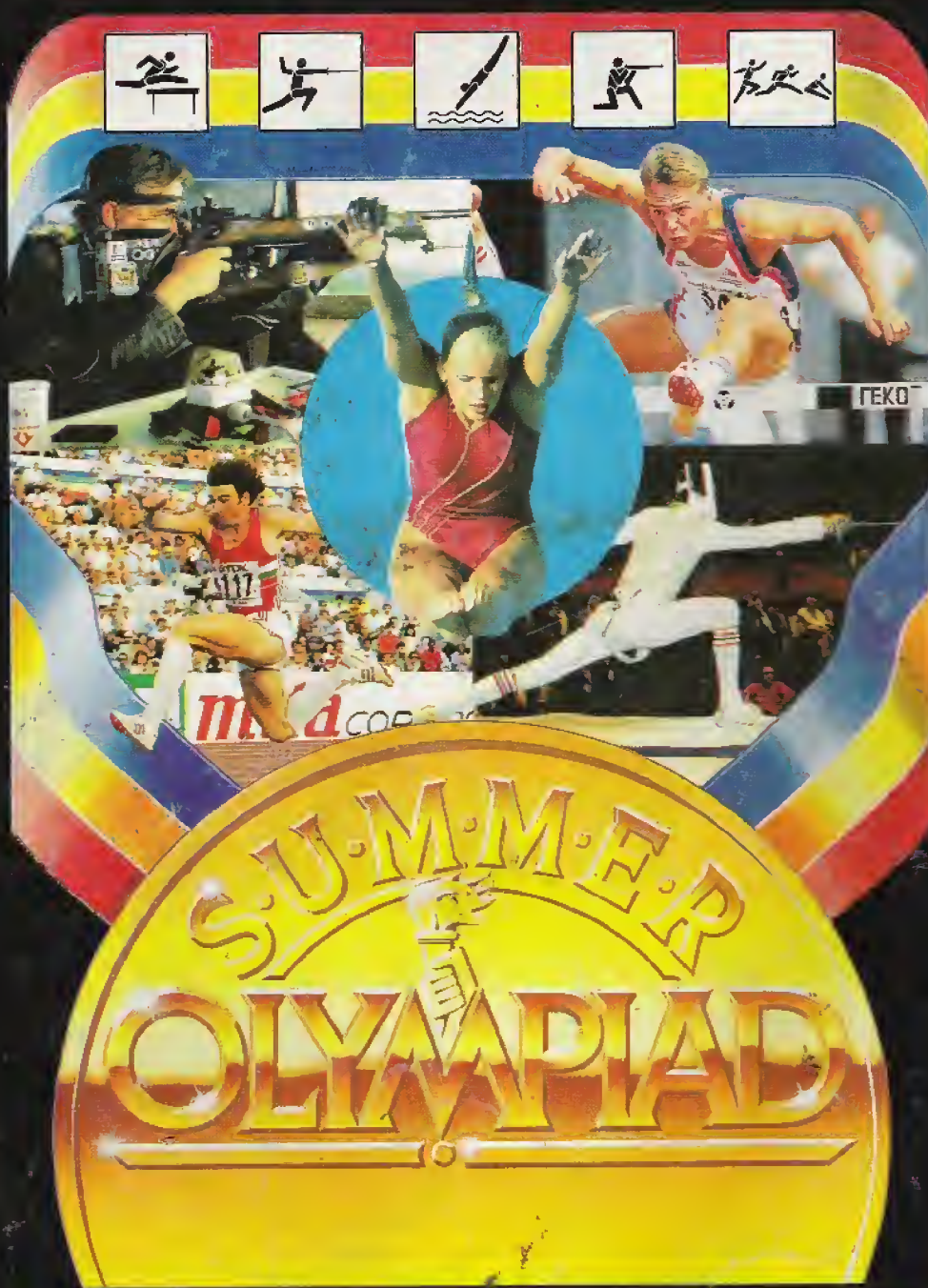
ARE YOU KEEPING UP WITH THE COMMODORE

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